April 11, 2006

MEMORANDUM **UTAH DEPARTMENT OF TRANSPORTATION**

TO: Jim McMinimee, P.E., Chairman

FROM: Barry Axelrod
Recorder, Standards Committee

Barry Axelrod
Digitally signed by Barry Axelrod
DN: cn=Barry Axelrod, c=US, l=Salt Lake City, st=UT, ou=http://www.usertrust.com/cps, email=baxelrod@utah.gov
Date: 2006.04.11 12:49:05 -06'00'

SUBJECT: Standards Committee Meeting Minutes and Next Meeting

The next meeting has been scheduled for Thursday, April 27, 2006 at 8:00 a.m., in the main 1st floor conference room of the Rampton Complex.

Item		Remarks	Sponsor
1.	Minutes of February 23, 2006	For approval	Barry Axelrod
2.	Supplemental Specification 02896, Boundary Survey	For approval	Wendell Hathaway
3.	Supplemental Specifications 00555M, Prosecution and Progress; 00725M, Scope of Work; 00727M, Control of Work; and 01282M, Payment	For approval	Larry Myers Jeff Saddler Karl Verhaeren
4.	Supplemental Specification 01452M, Profilograph and Pavement Smoothness	For approval	Karl Verhaeren
5.	Supplemental Specification 02633, Concrete Drainage Structures	For approval	Michael Fazio
6.	Supplemental Specification 13557, Overhead Variable Message Sign and Support	For approval	Troy Peterson
7.	Standards Committee Policy 08A5-1, membership update	For approval	Jim McMinimee Barry Axelrod
8.	New Standard Specification and Standard Drawing Schedule	For discussion	Richard Miller Barry Axelrod
9.	Review of Assignment/Action Log	For review	Jim McMinimee
10.	Meeting Improvements (on-going agenda item)	For discussion	Jim McMinimee
11.	Other Business 1. Standards Sheets 1B and 1C possible removal. Follow up from April 28, 2005 meeting.	For discussion	Jim McMinimee

JCM/ba
Attachments

cc:

Cory Pope Director, Region One	Stan Burns Engineering Services	Richard Miller Standards
Randy Park Director, Region Two	Vacant Structures	Barry Axelrod Standards
David Nazare Director, Region Three	Darrell Giannonatti Construction	Patti Charles Standards
Dal Hawks Director, Region Four	Tim Biel Materials	Shana Lindsey Research
	Richard Clarke Maintenance	Tracy Conti Operations
	Robert Hull Traffic and Safety	Carlos Machado and Todd Emery FHWA
		Mont Wilson AGC
		Tyler Yorgason ACEC

February 23, 2006

A regular meeting of the Standards Committee convened at 8:00 am, Thursday, February 23, 2006, in the 1st floor conference room of the Rampton Complex.

Members Present:

Jim McMinimee	Project Development	Chairman
Richard Miller	Standards and Specifications	Secretary
Barry Axelrod	Standards and Specifications	Recorder
Stan Burns	Engineering Services	Member
Darrell Giannonatti	Construction	Member
Richard Clarke	Maintenance	Member
John Leonard for Robert Hull	Traffic and Safety	Member
Troy Peterson for Tim Biel	Materials	Member
Todd Emery	FHWA	Advisory Member
Carlos Machado	FHWA	Advisory Member
Mont Wilson	AGC	Advisory Member
Tyler Yorgason	ACEC	Advisory Member

Members Absent:

Randy Park	Region 2	Member
Robert Hull	Traffic and Safety	Member
Tim Biel	Materials	Member
Vacant	Structures	Member

Staff:

Barry Axelrod	Standards and Specifications
Patti Charles	Standards and Specifications
Karl Verhaeren	Region 4 Construction
Shana Lindsey	Research
Boyd Wheeler	Structures
Denis Stuhff	Hydraulics
Stan Adams	Construction
Larry Myers	Construction
Michael Fazio	Hydraulics
Larry Montoya	Traffic and Safety

Visitors:

Roland Stanger	FHWA

Standards Committee Meeting

Minutes of the February 23, 2006 meeting:

1. Minutes of October 27, 2005 meeting were approved as written.

   Motion: Richard Clarke made a motion to accept the minutes as written. Seconded by Darrell Giannonatti. Passed unanimously.

2. Supplemental Specification 00725M, Scope of Work and 00820M, Legal Relations (Agenda Item 2) - Presented by Larry Myers.

   Larry said his main change was to bring the specification more in line with State statutes. He said Jim Beadles recommended the changes and original wording. Larry said the modified wording does not really state that intent. Larry added that if we do not use the original text that is not in active voice then this part should be left out.

   Discussion points were:

   - Barry said he lined out the text and added the one-line statement because the original two paragraphs were redundant with information in another Section. Barry said if the original text is to be left; it needs to be rewritten in active voice.

   - Larry said he did not think the information added anything to the specification and that it was something Beadles wanted.

   - Barry said even though this was Larry's main change the Supplemental Specification still needs to be approved. Barry explained that the Department Special Provision is also included in the change. Barry added that the Supplemental Specification currently in effect was included in this update.

   - In response to a question from Karl, Barry said none of paragraph G will be included and as such the recommended change to Article 1.1 to add the Section 00555 related section is not needed.

   - Referring to Section 00820M, Barry said this one also includes the related Department Special Provision.

   Larry covered his recommended changes to 00820M. He said the update was based on changes to insurance requirements and related court cases and that claims can only be to the extent allowed by law. He said we can not hold someone 100 percent liable so if we try the entire case could be thrown out. Article 1.15 paragraphs A and B were rewritten to cover this situation. Larry said paragraphs C and D clear up the language dealing with legal representation. Larry said the wording was worked out with the AGC.

Larry said the same group reviewed the OCIP requirements and made a few changes there. He said the big change was in Article 1.16, paragraph F. He said the notice of cancellation part was added to show the Department options.

- Jim asked how the $4,000,000 amount was arrived at in order to determine when OCIP would be required. Larry said OCIP will not cover anything $3,000,000 and under so they included a margin above the minimum.

- Larry said the other changes were just to clarify the wording.

- In response to a comment and question from John Leonard with respect to possible changes in the law Larry said the insurance amounts are minimums and that Risk Management reviews the requirements for each project and makes recommendations.

Motion: Stan Burns made a motion to approve Supplemental Specifications 00725M and 00820M as discussed and modified. Seconded by Richard Clarke. Passed unanimously.

Darrell asked to be recognized for a separate item. He then welcomed Karl to the meeting as the new Engineer for Construction. Darrell commented that Karl would now have his voting power. Jim said further discussion would be covered under Other Business. Barry commented that Committee membership is already on the agenda under Item 15, Other Business. Jim moved on to the next agenda item.

3. Supplemental Specification 01280M, Measurement and 01721M, Survey (Agenda Item 3) - Presented by Karl Verhaeren.

Karl said the change came about as a result of an earlier request from Mont Wilson. Karl said two Department Special Provisions have been in place that covers this. Karl said the problem was with how quantities were measured and paid. He said statements dealing with plan quantities in the Survey specification are being moved to the Measurement specification for a better fit.

Discussion points were:

- Barry said both incorporate Department Special Provisions as part of the review to reduce the number of these Special Provisions.

- Jim asked for an FHWA comment on their position. Todd said Karl talked to him about it and he agreed on what UDOT is doing.

- Karl said Article 1.10, dealing with small quantity testing is covered in the Minimum Sampling and Testing Guide and is therefore deleted.

- Referring to Section 01721M, Article 1.5 F, John Leonard asked if an electronic copy should be included. Karl said this was discussed a lot in preconstruction and with others. The hard copy was agreed upon. John commented that this is the Contractor doing the work, not the design. Karl agreed.

- Darrell said the commitment from the regions was that they would have their preconstruction staff do a six-month turn around and change the red-lined drawing into an electronic file.

Motion: Stan Burns made a motion to approve Supplemental Specifications 001280M and 01721M as presented. Seconded by John Leonard. Passed unanimously.

4. Supplemental Specification 02317, Structural Excavation (Agenda Item 4) - Presented by and Karl Verhaeren.

Karl said this is related to some of the discussions during the October 2005 meeting dealing with our practice of paying for imported material. He went on to explain the payment procedures in Article 1.5 in relation to the change. Karl said the change cleaned up the specification and brought it in line with current practice.

Discussion points were:

- Darrell asked Mont if he was alright with the changes. Mont said it was discussed with the AGC and he agreed with the changes. He said their concerns were addressed.

Motion: Stan Burns made a motion to approve Supplemental Specification 02317 as presented. Seconded by Troy Peterson. Passed unanimously.

5. Supplemental Specification 02748M, Prime Coat/Tack Coat (Agenda Item 5) - Presented by Karl Verhaeren.

Karl said the purpose of the change was to do away with the bid item for Tack Coat and include it with the surfacing item. Karl said the reason is that it has been difficult in some locations to get information from Contractors on quantities. He said this has been used for a year or more as a Special Provision.

Discussion points were:

- Darrell asked Mont if he could see any scenario where we would have a difficult time getting a proper tack coat by putting this pay item with HMA for example. Mont said no, as long as it was included with clear language.

- Jim asked Darrell and Karl about past delamination problems, saying that it has been a tack coat problem. Jim said in the past we could forensically look at the problem, asking if that would be eliminated by this change. Karl said it should not because the documentation is in place to show the application rates. Darrell said in the past it has always been an enforcement issue. Jim asked if the RCE group discussed this and how are we going to get our people to understand that the tack coat is a very important part of our paving system. Karl said it goes back to the documentation and inspection procedures.

- Jim again asked if the RCE discussed this. Karl said he thought the RMEs spent more time discussing it.

Motion: Richard Clarke made a motion to approve Supplemental Specification 02748M as presented. Seconded by Stan Burns. Passed unanimously.

6. Standard Drawings DG 5 Series Drawings. (DG 5A, Plastic Pipe Culvert Installation; DG 5B, Metal Pipe or Pipe Arch Culvert Installation; and DG 5C, Precast Concrete Pipe Culvert Installation) (Agenda Item 6) – Presented by Michael Fazio.

Michael said some issues came up last time when DG 5 was first presented because other types of pipe were not covered. He said the direction from the Standards Committee was to provide other drawings to cover this. Michael said two drawings were added. He said the drawings are now classified as 5A, 5B, and 5C. Michael said the comments last time on trench safety were incorporated. He said the requirement for flowable fill was eliminated from the drawings. Michael indicated that additional coordination comments were incorporated where applicable as were trench width tables. He said the drawings are ready for approval.

Discussion points were:

- Jim asked about industry comments and if there were no comments or did he miss them. Michael said the drawings were sent to industry areas. Only a few responses were received.

- Jim asked Mont if he thought his question last time on trench safety was adequately addressed. Mont indicated they were. Michael said he noticed they forgot to put the trench safety note on DG 5C but will add it.

Motion: Stan Burns made a motion to approve Standard Drawings DG 5A, DG 5B, and DG 5C as discussed and modified. Seconded by Richard Clarke.

Discussion points were:

- Karl had a suggestion on the drawing notes. For note 11 on DG 5A, note 10 on DG 5B, and note 7 on DG 5C Karl suggested adding the word “suitable” to the “backfill material” requirement.

Motion: Stan accepted that change to the motion.

Discussion points were:

- Mont asked about the water test discussed at the last meeting. Barry indicated that would be covered under Agenda Item 8.

Motion: Jim called the question. Passed unanimously.

7. Standard Drawing DG 6, Safety Slope End Section for Circular and Arched Pipes (Agenda Item 7) – Presented by Michael Fazio.

Michael said this is a new Standard Drawing because we do not have a current Standard for safety slope end sections.

Discussion points were:

- Jim asked if this will result in the installation of something with a positive cost-benefit ratio in terms of accidents. John said there was no coordination with the traffic engineers and this was the first he has seen the drawing. John said typically the pipe is extended beyond the clear zone, allowing a forgivable slope that becomes recoverable. He said by using the end section the pipe would not have to be extended as far. John said the end section would significantly stop roll-overs where a car runs off the road and hits the pipe.

- Stan asked if any 350 testing was done on the end section. John said this device is a standard practice in most states. John added it comes from the Roadside Design Guide. With respect to 350 testing, John said you do not have a 350 design because the end section is traversable, not an impact. John said 350 testing is based on impacts.

- Stan commented that he thought the opening was big. John said a typical vehicle running at speeds will go across the opening. John said UDOT has chosen to not use this and has extended the pipe. He said a lot of the Maintenance Stations have been doing that. Stan said it would be interesting to see an analysis on this because we do have a lot of crash data. John said from experience we have had a few related fatal accidents. John said they could do a search to identify the information.

- John said from a cost point of view you can save a twenty-foot length of pipe or more with the end sections. Stan said it would be interesting to see the analysis for cost savings.

- Jim asked about the cost. Michael said it is comparable to and no more expensive than a normal end section. Denis said it is two and a half times the cost for the larger end section. Denis said it also supports the Departments Context Sensitive Solutions design goal.

- Jim said he keeps going over in his mind something this Committee has struggled with in the past on several items. He said good ideas come to the Committee but we struggle with the actual cost - benefit ratio. Jim said the question is always do we spend our money doing this (whatever the proposal is) or do we better spend our money doing something else with a higher cost - benefit ratio. Jim said they are discussing this in their asset management meetings now, adding that he believes we will get to a Departmental floor for cost - benefit ratios. Jim said it will be a good day when we get there. Michael said he could provide that information for the next meeting.

- Denis said this was not intended to replace standard end sections but was intended to allow the designers in certain situations to select safety end sections. He said right now they do not have that option. Jim said the designers could then do the trade off discussed earlier. Jim said that makes him feel better. Denis said that John has volunteered to provide training to the region designers as to where the end sections are and are not appropriate. In response to a comment Michael agreed that Consultant designers should be included in the training.

- In response to a comment from Richard Clarke, Michael said this drawing does not replace existing drawings for end sections.

- Richard Miller said they have received several comments from Betty Purdie about coordination of changes. He asked Michael if the drawings were sent to Betty for coordination. Michael said he sent the drawings to her for comments but did not receive any comments back.

- Richard Clarke said his only concern was that we are pushing the use of this type of end section as an exclusive option. Michael said that is not the case.

- Stan asked about cleaning out this type of end section compared to the typical ones. Richard Clarke said that is an issue and needs to be considered whenever it is put in the design. He said when looking at this as an option on a project the cost needs to be looked at, with cleaning being part of that cost.

- Karl asked John and Roland if it would ever be used on a slope steeper than a four to one. John said he did not think we should limit use based on slope, going on to present various scenarios.

- Mont asked what the rationale was for using the safety bars. John said basically it is to reduce the snagging potential as the width of the end section gets wider. John said it is a really good idea from a safety point of view.

- Addressing the cleaning question, Michael said the bars are bolted in so they can be removed. He said the bars could also prevent large debris from getting into the pipe.

Motion: John Leonard made a motion to approve Standard Drawing DG 6 as discussed and modified, with the elimination of note 7 on slope requirements. Seconded by Richard Clarke.

Further discussion points were:

- Stan commented on the half-inch carriage bolts, indicating that in a few years you would not be able to unscrew them because of rust.

- Barry commented that the current DG 6 is becoming DG 5C, with this new drawing replacing the DG 6 number.

- Michael said he would add a stainless steel bolt callout to the drawing.

- Referring to the earlier discussion that this drawing is an option, Stan asked if it is understood to a designer that this is an option. He asked if that is clearly stated in the drawing. He asked if there is going to be confusion having two drawings. Denis said with an inexperienced person there could be some confusion. He said hopefully training, reviews, and other areas will take care of that. Stan asked how a consultant will know which drawing to use. Tyler suggested adding a note. Jim asked where the note should be placed. John said the most important note should be up front.

Motion: The original motion was withdrawn. John Leonard made a new motion to approve Standard Drawing DG 6 as discussed and modified with the elimination of note 7, the addition of a new note 1 to specify the application is optional for use in the AASHTO clear zone as specified in the Roadside Design Guide, and to add verbiage on the use of stainless steel bolts . Seconded by Stan Burns. Passed unanimously.

8. Supplemental Specification 02633, Precast Concrete Drainage Structures (Agenda Item 8) – Presented by Michael Fazio.

Michael said that based on the action item a team met to review and update the section. The meeting resulted in valuable updates to the section. He said he met a few times with Karl to review wording with the result being the elimination of a lot of redundancy. Michael said he thought the section is now ready for approval. Michael indicated that Karl would like another section added to cover cast-in-place.

Discussion points were:

- Commenting on the need for another section, Karl said it would be like the previous discussion where it would be an option to select from. Michael agreed, adding that they plan on moving forward to create the second specification. With that in mind Michael still indicated that Section 02633 was ready for approval.

- Michael asked if the Committee wanted to approve the section now or wait until the additional section was ready.

- Commenting on the tests listed on the last page of the section, Mont asked who is authorized to conduct the tests and if that needed to be stated in the specification. Michael said the Contractor can conduct the tests. Mont then asked about documentation after the test is conducted. Michael said that was a good question.

- Referring to Article 3.7, Testing, Stan commented that this went back to Mont's question. Stan asked if it is clear what failure is with respect to visual inspection. Michael said they discussed this in length and that you can really tell when there is a problem. He said the gaps are obvious.

- Stan said this is subjective, asking if there is a way to make it objective. Michael said if you see a problem there is a mechanism to verify and correct it. Mont said the inspector has the right to say he does not think the joint is water tight and that it should be tested. If the test fails then the Contractor has to fix the problem, but if the test passes, the Department has to pay for the test.

- Commenting on the tests, Todd Emery asked if it is an easy test. He asked if the inspector is going to know if the test was set up and run correctly. Boyd said that if the Contractor messes up the test and does not do it properly then it will leak and therefore cost him money. Boyd added that it is to the Contractor's advantage to make sure the test is performed properly. Denis handout some pictures from actual projects, explaining the problems.

Motion: Stan Burns made a motion to approve Supplemental Specification 02633 as discussed. Stan commented that he did not think any changes were discussed. Seconded by Richard Clarke.

Further discussion points were:

- Karl commented about the need for bid items and that the second option needs to be in place. Boyd said if the designer specifies precast then we would have a specification to cover that option. Jim asked Karl if that alleviated his concern. Karl said for simplicity purposes we should have the bid item that specifies either. Karl asked if we are allowing the designer to specify precast or are we allowing the Contractor a choice to use either.

- Boyd said he understood the question but did not know how to respond. Boyd said this at least gets the specification out and we can follow up with the other option. Karl said it is not a designer option, but is a Contractor option. Boyd said in that case we could put this one on hold until the other specification is ready.

- Tyler said as a designer he agreed that the other option is needed.

- In response to a bid item question from Patti Charles, Karl said he is trying to avoid the requirement for the designer to put in all the bid items to be able to give the Contractor all the options. Boyd said we can not give the Contractor that option until the other specification is in place. Commenting on various bid options, Karl said everything should be put together first.

- Karl asked Barry if the Supplemental Specification is approved can it be held and published when the second section is ready. Barry said in the past they preferred not to approve a change and then hold it for a later time. Jim asked Michael if it hurt them if this was not approved at this time. Barry asked how long would it be before the second one was ready. Boyd said he thought by the next meeting. Michael agreed that it would be ready for the next meeting.

- Jim asked if this could be used as a Special Provision in the mean time. Boyd said they could.

Motion: Stan withdrew his earlier motion for approval.

Jim thanked Michael, Boyd, and Denis for there work on this item.

Action Item: Hydraulics to create a Supplemental Specification to cover the cast-in-place option to go along with the precast option. When that section is ready both will be brought back for approval.

9. Standard Drawings, SL Series Drawings (SL 1A, Traffic Signal Mast Arm Pole And Luminaire Extension; SL 1B, Traffic Signal Mast Arm Pole And Luminaire Extension; SL 2, Traffic Signal Mast Arm Details 30’ Thru 75’; SL 3, Underground Service Pedestal Details; SL 4, Traffic Signal Mast Arm Pole Foundation; SL 5, Traffic Signal Pole; SL 8, Signal Head Details; SL 10, Traffic Signal Controller Base Details; SL 11, Traffic Signal Loop Detector Details; and SL 13, Video Detection Camera Mount) (Agenda Item 9) – Presented by Larry Montoya.

Larry said the last change to the SL series drawings was about two years ago. He said the changes being proposed today are things that have happened in construction. Two examples are foundations installed to high above the ground and signal heads placed above the MUTCD maximum. Other changes on the drawings correct typographical errors. Larry reviewed each drawing.

Larry said part of the submittal sheet details each of the drawing changes. He said they held a series of meeting with the region signal technicians, traffic engineers, and others involved in signal projects.

SL 1A: Larry said the signal heads were lowered with full adjustability so height adjustments can be made as needed. He said clarifications were made to the notes. Larry pointed out some typos that were missed in the 30' Mast Arm callout. Being no questions on the drawing Larry moved on to SL 1B.

SL 1B: Larry said the connection point on the pole for the mast arm was too high, causing problems. He said the dimension was changed to 20 feet. He said the angle of the arm was also changed. It was changed from 4 degrees to 3 degrees so the end height was the same as the curved mast arm.

Discussion points were:

- Jim said he had a general question not related to a specific drawing. Jim said recently he has seen a lot of information about the addition of either DII or other types of ITS infrastructure to signal poles and other types of installations. Jim said he was wondering what planning, if any, are we doing. Giving an example of an antenna and associated wiring, Jim asked if that type of safety factor has been looked at. Larry said they have been working with Valmont on this with respect to loading. Larry said sheets 1A and 1B show the maximum loading. He said an antenna for example compared to additional signs is not impacted by the wind as the sign would be. He said if signs were added then he would recommend the manufacturer look at the loading limits.

- Referring to SL 1B, Barry asked about the end cap and pole cap. He said the end cap location is shown but the pole cap is not. Larry said it is used if the luminaire arm is not used. Barry asked if that needed to be identified on the drawing. Barry said he assumed the same applied to SL 1A, but neither cap detail is shown on the drawing. He asked if SL 1A could reference SL 1B, even though two different systems. Barry said he wasn't sure his comments were applicable. Larry said they were, adding that the details were not included on SL 1A because there was not enough room. Larry said a note could be added to SL 1A. Barry said because of cross-references both drawings have to go in projects even when only one type of mast arm is called for. Even with two different designs, both drawings have to be in each project calling for either arm.

- John commented about the sign size on both drawings. He said the correct width is 22 inches. Larry said they will double check the dimensions and correct accordingly.

Larry discussed SL 2 next. He said updated information for the lower left table was just received from the manufacturer. The table will be updated. Larry covered the other changes. He said note 2 was clarified to cover extra slack so the signal head is adjustable. The details also reflect this. There was no discussion on SL 2.

Larry said SL 3 needed a lot of work. He said it was a confusing drawing. Larry said they tried to align things better in both the section and plan views so the details were easier to follow. He said the base details were changed, adding that details were included even for state furnished items so that the Contractor had the information to assist when building the items. There was no discussion on SL 3.

Moving on to SL 4, Larry said they changed the location of the grounding lug to the back side of the pole from the hand hole. He said this allows the hand hole cover plate to seal better. He said a dimension was also added to the Pole Base Detail to show at least a quarter inch of bolt above the nut. He said they have seen some incorrect installations when not enough bolt was above the nut. Larry went on to say the torque requirements were also changed. There was no discussion on SL 4.

On SL 5, Larry said a 15 foot pole dimension was added. He said for some ramp meter projects, signal heads were mounted too low. He said there was no change with respect to the 11 foot pole, used primarily on pedestrian projects. Larry pointed out the junction box callout was changed to just "junction box," with no reference to type. There was no discussion on SL 5.

On SL 8, Larry said a new Type II signal head was added. The others were redesignated. The Type II has a red ball with yellow and green arrows. A backplate detail was added for the Type V heads. The notes were updated to cover the additional type. Larry pointed out that note 3 still needed to be updated.

Discussion points were:

- John asked about SPUI installations where the arrows are on an angle. Larry said that can be called out on the plans. There were no additional comments on SL 8.

On SL 9, Larry asked to hold this drawing until the next meeting. He said there has been a change in the sign requirement based on an MUTCD change. A new button will also be shown. Larry said in the mean time they will provide design information when needed. There was no significant discussion on SL 9.

Moving on to SL 10, Larry said the biggest change was to eliminate the anchor bolts. He explained the new process. He said the Contractor will place the cabinets and mark the anchor bolt location. Expansion anchors will then be placed. He said this is an easier process. He said the other change was the 3 inch conduit stub that is now shown. He said a callout for a cap is also shown when the conduit is not used. There was no discussion on SL 10.

Larry moved on to SL 11. Larry said they have been talking to Maintenance about the best way to fill in the cuts for the trench and loops. He said the major change was in Section E - E. He said crack seal did not work if the cut was more than an inch wide. He said a flat nose would be used on the jack hammer. Other than to point out a typo there was no discussion on SL 11.

On SL 13, Larry said the changes on this drawing corrected reference problems by eliminating the references. He said note clarifications were also made. Larry pointed out that Note C needed to be corrected to remove a comma and add the word "and" after "2 turn lanes." There was no discussion on SL 13.

Larry asked if there were any questions on the package of drawings. There was no further discussion.

Motion: John Leonard made a motion to approve Standard Drawings SL 1A, SL 1B, SL 2, SL 3, SL 4, SL 5, SL 8, SL 10, SL 11, and SL 13 discussed and modified. Seconded by Stan Burns. Passed unanimously.

10. Standard Drawings, AT Series Drawings (AT 7, Polymer-Concrete Junction Box Details and AT 11, CCTV Pole Details) (Agenda Item 10) – Presented by Larry Montoya.

Larry pointed out that AT 9 is being pulled from the discussion. He said the drawing will be brought back at a future date. Larry said with respect to AT 7, there have been problems in the field with these junction box installations and the load rating. He said the problem was where to install the different load rated junction boxes. He said another part of the confusion was in the field and not being able to readily identify the boxes between a load rating 1 and 2. Larry said they decided to eliminate load rating 2 and go with just one rating. Larry said the boxes are not rated for street driving, but if a car were to drive over the box it would not crack. He said they are a good option to use behind curb and gutter, around signal poles, or adjacent to breakaway freeway lighting poles for example. He said the largest box would cost around $100 more. To clarify, load rating 2 is going away, staying with all under the load rating 1 option.

Larry then moved on to AT 11. Referring to Detail C, Larry said there was an incorrect drawing call out listed for the foundation. He said it now shows the reference to SL 14 and SL 15. He said the outside diameter was added to the top of the pole so the dimension is available for the Contractor furnished cap.

There were no questions or comments on the drawings.

Motion: John Leonard made a motion to approve Standard Drawings AT 7 and AT 11 as presented. Seconded by Stan Burns. Passed unanimously.

11. Deviating From Standards (Agenda Item 11) – Presented by Richard Miller.

Richard said this is an update on what has happened since the last meeting. Richard said Jim took the item to the QIC meeting where it was referred to the region directors. Richard said he, Jim, and Barry then met with the region directors. As a result a Deviation from UDOT Standards was added to the current Design Exception/Design Waiver Process. Richard said the region directors wanted to get a process out as soon as possible and fix it as needed. Richard said the new process was completed with notification sent out by Carlos. The process is now in effect. The process and forms are available on the UDOT Web site.

Discussion points were:

- Barry said the Web location is under Doing Business, Consultant and Designer Resources to the new process title. Barry said Steve Anderson helped him redesign the Web site with the new and updated information.

Richard said three levels for a deviation from Standards were created. He said those under Level 1 come to the central office for approval by Traffic and Safety and Preconstruction.

- John commented about the Level 2 and having the region director approving the deletion of a Standard Drawing. He said he didn't think that was a good idea. Richard said that isn't really changing anything the region director can't already do with a detailed drawing.

- Richard said this is something that can be talked about, adding that the process was something we wanted to get out there.

- Shana asked if liability will be reduced by the process. Richard and Barry both said they hoped that would be the case.

- John said law suits that have come in, indicate region directors only have limited discretionary authority, but have full economic authority.

- Tyler commented that the Level 1 covers items related to safety.

- Barry asked John if his comments referred to deleting Supplemental Specifications or Standards, indicating that John had only referred to Standard Drawings. Barry asked John if he was implying both. John said yes, adding that anything that comes out of this Committee is what they are concerned about with respect to a region having the authority to delete the item.

- Tyler asked where in the process this would be handled and would it be done in stages. Richard said it could be handled anywhere in the design process but they would like the design exceptions taken care of in the DRS process.

- Jim asked if there is some point in our QA/QC process that this is addressed. Jim asked if anything was added to the Advertising Checklist for example. Richard said they have not reviewed the QA/QC process, adding that is something they should do. Comments indicated this was the Design QA/QC process. Jim said that process is different from the Advertising process. Jim said he is wondering how from both sides we assure this happens.

- Todd Emery asked if the other items from Level 2 and 3 were something the Complex would like to see, but not necessarily take action on, just have the regions submit to Richard or someone saying here is what we did.

- Richard said Shana brought up a good point on the liability issue.

- Richard said it is something we should see if the regions are following the process. Todd commented that he thought having this new process was great, adding that he did not want it to get carried away with the regions using it to delete standards they do not like. Todd said if there is a problem with a standard then that needed to be addressed.

- Jim said an advantage of this process is that we could spot trends and places where we have problems. Shana commented that other processes still need to be followed.

- There was no further discussion.

12. Integration of the AASHTO Green Book and the MUTCD with respect to roadway design (Agenda Item 12) – Presented by Todd Emery and Roland Stanger.

Roland referred to the submittal sheet, summarizing his comments.

The following is quoted from the submittal sheet. “FHWA references the AASHTO Green Book in the Code of Federal Regulations (CFR) as the design manual for highways on the NHS and publishes the MUTCD and is applicable on all roads open to public travel. The no passing distances are different because each have different methodologies and assumptions dating back to the 1930’s and 40’s. Historically design has been more conservative than operational.”

“FHWA believes that the passing sight distances in both documents are reasonable for each purpose; therefore, the Green Book is for designing and that the MUTCD is applicable for operational.”

Discussion points were:

- Jim asked about the original question from the October meeting. Richard said the AASHTO Green Book passing sight distance accounts for a vehicle coming towards you where the MUTCD passing sight distance allows for the distance it takes for a vehicle to pass another. Barry quoted the Action Item where it stated that Todd Emery was to have Roland Stanger check into the integration of the AASHTO Green Book and the MUTCD with respect to roadway design.

- Todd said the answer is that when you design, use the AASHTO Green Book and when it is operations type stuff use the MUTCD.

- Using an example, Stan said you build a road and two years later you have to go out and reapply paint. He asked do you use the MUTCD or the original design. Roland said you use the MUTCD. Stan asked if you would then change the design. Shana said if the paint wore out you are just replacing it.

- Using a different example, Stan said for example you build a road to the Green Book and then get calls from a lot of citizens saying your passing sight distance is too conservative. He said at that point a traffic engineer would get involved. Stan asked if the traffic engineer would have the ability to say I am not going to use the AASHTO but use the MUTCD. Two comments indicated yes. Richard Clarke said the traffic engineer would make an engineering judgment, but he would have that flexibility.

- Roland said you could even check the MUTCD before opening the road and stripe according to the MUTCD. Stan commented saying that is based on engineering judgment. Roland concurred.

- Roland went on to say design criteria allow as many passing zones as possible, with constraints.

- Jim commented saying this was brought up to give our designers advice. Richard said as they were writing the Roadway Design Manual of Instruction it was decided at the last Standard Committee meeting to go with the AASHTO requirements for any design. Richard said we still wanted Todd to give the guidance on AASHTO versus MUTCD.

- Jim asked if it would be appropriate in our guide to somehow lay this discussion out for designers so they would understand the process.

- Shana said there are benefits for the flexibility, adding that we do not want to be too rigid.

- Tyler asked if you want to write that flexibility into the design. Jim said that was the reason for the question. Todd said he did not know if there is flexibility. He said you design to the AASHTO Green Book.

- Jim said it goes back to what Karl said, deviating from Standards. Todd said it is a federal regulation that we can not deviate from. He said you can not deviate from the AASHTO standard. He said for design criteria AAHTO is the minimum.

- Jim said Richard's group has decided how they are going to proceed from a design manual of instruction standpoint, that is for design you use the AASHTO standard. Jim said maybe in the operational safety manual you have the discussion that it is designed by this standard but MUTCD allows another standard with engineering judgment.

- Jim said he thought we were okay as far as our standards are concerned.

13. Review of Assignment/Action Log (Agenda Item 13)

- Item 1, Rumble Strips. John said the policy went through the Traffic Policy Committee last week and was approved. He said Tracy Conti signed off on it so the policy is ready to be published. In response to a question John said eventually there will be a Standard Drawing that reflects everything on the policy. Barry asked if the action item should be closed or still carried forward. John said they are still waiting for results of a research study on centerline rumble strips. John said it is being used as a detail sheet right now. Barry asked about a target date. John said the drawing is there and that is was just a matter of time in getting the research results. John said to put it on the agenda for the next meeting. Target date: April 2006 meeting.

- Item 2, Three-Legged/ Four-Legged Intersection. John said the three-legged one was taken to the Traffic Engineering Panel. He said they did not reach a consensus. John said they will build the three-legged one at the same time the four-legged one comes out, bring it to the Traffic Policy Committee and then bring it here. John asked about the submittal date for the next meeting. Barry said the beginning of April to make the April 27 meeting. John said that does not give them much time to put something together. John said he would try for the next meeting but to put it for the June meeting. Target date: June 2006 meeting.

- Item 3, Deviating from Standards. Barry said the item is closed. It was covered under Agenda Item 11.

- Item 4, Supplemental Specification 00555M. Barry said that item is still open. John said they are still waiting for upper management direction because of concerns. Target date changed to Open. No specific date could be set.

- Item 5, Standard Drawing DG 5, Plastic Pipe Culvert Bedding. Barry said this item is closed. Covered under Agenda Item 6.

- Item 6, Supplemental Specification 02633, Precast Concrete Drainage Structures. Barry said this item is closed. Covered under Agenda Item 8. The supplemental specification will be brought back for approval with a cast in place supplemental specification.

- Item 7, AASHTO vs MUTCD with respect to roadway design. Barry said this item is closed. Covered under Agenda Item 12.

- Item 8, Painted Cattle Guard. John said this is going to be put through as a UTRAC proposal to see if we can get someone to help come up with the criteria. John said everyone realizes there is no guidance available. Jim asked if that would then put it a year out. Shana said she did not know what kind of research you would get. John said they are just not finding anything anywhere. He said they can do the technical things very easily. Shana asked if the study would be done in-house. John thought BYU or something like that. Richard Clarke said they do whatever the rancher wants when the rancher requests a cattle guard. If the rancher wants a painted cattle guard they do it that way. Richard said they do not know if it works but if the rancher is happy, they are as well. John said the scary part is do we assume liability for something that may or may not work. John said during his research he found the local entities would put them in if the rancher paid for and maintained them. He said he found that in many places. John said he could not find any substantiated benefits. Stan asked about accident history with cars hitting animals. John said the hits are usually open range and not necessarily a cattle guard issue. He said they are not finding anything that suggests one way or the other that cattle guards are effective. John restated the fact that Utah is an open range state. Jim again commented about the one year outlook. John agreed. Barry asked if the item should be left on the action log. Jim said yes.

- Jim asked about another item that is not on the Action Log. He said it came from an email on half-shoulders. Barry said it was just in an email and never discussed in order to make the Action Log. John said they feel strongly about the half-shoulder. There was no further discussion on this item.

- There was no additional discussion on the Action Log.

- The status report as handed out at the meeting follows:

Action Item Update for February 23, 2006 Standards Committee Meeting

(As of February 6, 2006)

Item 1, Rumble Strips: Item was due for this meeting. No information received in response to request.

Item 2, New Drawing of Four-Legged Intersection: Item was due for this meeting. No information received in response to request.

Item 3, Deviating from Standards: This item is on the February agenda for update. A new procedure for Design Exceptions, Design Waivers, and Deviating from Standards is now in effect. **Recommend closing.**

Item 4, Supplemental Specification 00555M, Prosecution and Progress, Limits of Operation: Item was due for this meeting. No information received in response to request.

Item 5, Standard Drawing DG 5 Series. This item is on the February agenda for approval. Series split into DG 5A, DG 5B, and DG 5C.

Item 6, Supplemental Specification 02633, Precast Concrete Drainage Structures. This item is on the February agenda for approval.

Item 7, Discussion of integration of the AASHTO Green Book and the MUTCD with respect to roadway design. This item is on the February agenda for discussion.

Item 8, Painted Cattle Guard issue to the Maintenance Operations Engineers. The target date is unknown. No information received in response to request.

14. Meeting Improvements (on-going agenda item) (Agenda Item 14).

Barry said the only comment he had was that he wanted to thank everyone who had items for approval this month, supplemental specifications and standard drawings, for working with them and getting everything in on time or for coordinating delays. Barry said this was one of the better months for getting the package put together. He asked that everyone keep doing it that way.

John asked if there was a way to break the PDF file down a little easier to use. He said those without duplex printers get a lot of extra pages with the blank pages that are inserted into the file. He said a lot of extra paper is used with all the “This page left blank” pages in the package. Barry said that could be done. He asked if any one cared if drawings were back to back on duplex copies. Barry said the blank pages make it easier when sorting through a lot of pages. Barry said they can do that but when printed back to back you may get a submittal sheet starting on the back of the previous drawing. Barry said he would discuss it further after the meeting.

Shana asked about the Action Item summary at the end of the package. Barry said that was something Jim asked to be added. Shana said she was wondering about the black on white paint. She said this was something that came up when she was in the region. She said she has never seen any results on this. Barry said it was an item that was discussed months ago and subsequently closed. Discussion followed on what several people thought the disposition might have been. Barry said he could look to see if he could find something on the subject but not track it on the current action log.

15. Other Business:

Standards Committee Membership

Jim referred back to earlier comments on the Standards Committee membership. He asked Barry to lead the discussion. Barry said they were looking at two different things. He said the first was what Darrell brought up at the beginning of the meeting on changing the Construction Division membership. Barry said the other deals with the Structures area and how to handle that split into three different areas, with parts under Research, Environmental, and Engineering Services. Barry asked if we have a specific Structures member and if not then that position would be deleted. Barry said one option they discussed with Jim was for the Design Section to become the member. He said there are two separate items.

Jim continued with the discussion. He said what Darrell announced earlier was that he was passing the Construction seat on the Standards Committee on to Karl. Jim said the Materials seat still remains. Barry said the wording of the membership position would have to be changed if this is approved.

Jim said for the other part, Structures had a seat on the Committee. He said the question is what to do with that seat. Jim explained the change where Stan took over the Design Section, Shana took on the Operations Section, and Brent Jensen has Hydraulics and Geotechnical. Stan asked Shana if she was a voting member. Barry said Research is not a member of the Committee under the current policy. Barry said if that needs to change then that is a third thing to discuss. Stan said he can not have two votes. Barry asked who is over the Design Section. Boyd Wheeler is over that section. Barry said that was why he asked Boyd if he was staying when he left earlier, after the Agenda Item he was here for.

Jim said one suggestion he heard was to have Shana as a representative, giving Research a voting seat on the Committee. A second suggestion was to have Boyd be a representative with Bridge Design getting a voting seat.

Discussion moved on to the Construction part of the membership. Stan said that Darrell has always had good ideas for discussion. John said even though he is here as the member for Robert Hull, two regular members are not here today. He said he would like to get at least Robert’s opinion on the subject.

Jim said this may be something to take to the Technical Committee to get their feelings. Jim said he has also had at least one region director tell him that this Committee is heavy on Central representation. He said another thought would be to involve another region. Darrell said it would be good if we got more region flavor in here.

Jim then brought up Environmental representation. Jim said he did not think we had a lot of environmental issues brought up. Barry said a couple items have come to the Committee over the last several months. He said supplemental specifications and standard drawings have been discussed. Jim commented that those were Construction issues. Barry said we get those once and then nothing for a while, adding there may be environmental issues in other areas.

Jim said he would take the assignment to bring something back on the membership of the Committee. Barry said he would get with Jim to get the policy on the next agenda.

Action Item: Jim to take the membership issues to the Technical Committee. Policy changes will be brought back to the next meeting for approval.

Bid Item for Local Government Signs
Jim said recently there have been management discussions on possibly adding a bid item on Local Government projects to include some type of a sign that would identify the owner of the project and the partners. He said this would be a way to raise awareness on money issues and where the money came from for the project. He said it would also raise awareness of the ownership and who is guiding the project.

Roland commented that there is Federal guidance on this issue. Barry said this follows along with the Construction Zone sign drawing listing the Contractor's name and logo that was tried several years ago that we could not do. Jim said this would be just for Local Government projects. He said he thought most people are aware of who is doing what on a UDOT state-road project.

Jim said what we seem to have a lot of difficulty with is for example Highland Drive in Salt Lake County and whose project is that.

There was no further discussion on this item.

Temporary Traffic Control Devices
Todd Emery brought up this item. He said it deals with breaking out some of the temporary traffic control items as separate items. He said one in particular is barrier. Todd said they have not received all the guidance yet and he is not certain how it will apply. He said it could be problematic with the way UDOT does business because Contractor traffic control is done lump sum. Todd said if barrier is going to be used it may have to be broken out as a separate pay item. Darrell asked when will there be an interpretation. Jim asked Todd if he is suggesting we have a group look into this. Roland said to wait until the guidance comes out. There was no further discussion.

There was no further discussion or new business.

Adjourned.

The next regular meeting of the Standards Committee has been scheduled for Thursday, April 27, 2006, at 8:00 a.m., in the 1st floor conference room of the Rampton Complex.

Approval of Minutes: The foregoing minutes were approved at a meeting of the Standards Committee held _____, 2006.

Assignment/Action Item Log

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
June 27, 2002	1	Standard Drawing PV 8 (Rumble Strip)	Darrell to assign someone from Construction.	Open	April 2006 meeting
October 31, 2002			Richard Miller from Maintenance. Fred Doehring. Betty Purdie. Robert Hull to head the group.		
December 19, 2002		- Process being reviewed. Research looking into testing.	Robert Hull Stan Burns		
February 27, 2003		- A policy is to be developed over the next several months.	Robert Hull		
April 24, 2003		- No change	Stan Burns		
June 26, 2003		- No further updates. Target date changed.			
August 28, 2003		- Progress continuing. To work with Research.			
October 30, 2003		- Process continuing.			
December 18, 2003		- Still being worked.			
February 26, 2004		- No update			
April 29, 2004		- Jim to follow up with Research.			
June 24, 2004		-Research has study with University of Utah			
August 26, 2004		- Research study complete. Policy being written.			
October 21, 2004		- Waiting for BYU study results.			
February 24, 2005		- Still being reviewed. Target changed.			
April 28, 2005		- No change			
June 30, 2005		- No one present to discuss.			
August 25, 2005		- QIT working on a policy. Item being tracked as Rumble Strip Policy.	Traffic and Safety - Robert Hull		
October 27, 2005		- December meeting canceled. Target date updated.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
February 23, 2006	1	**Item continued.** Standard Drawing PV 8 (Rumble Strip) - Policy approved. Drawing to be completed.	Traffic and Safety - Robert Hull		
August 28, 2003 October 30, 2003 December 18, 2003 February 26, 2004 April 29, 2004 June 24, 2004 August 26, 2004 October 21, 2004 February 24, 2005 April 28, 2005 June 30, 2005 August 25, 2005 October 27, 2005 February 23, 2006	2	A new drawing depicting the three-legged/four-legged intersection to be developed. - No change in status. - Target date set. - No change. - Being developed - No report. Not due until August. E-mail sent to SAF and RES. - No change except target date. - Still under development. Target date moved. - No change. Work priorities prevented further review. - No change - No one present to discuss. - Looking at three-legged intersection first. - Not due. No action required. - Reviewed by the Traffic Engineering Panel. Drawings being developed.	John Leonard	Open	June 2006 meeting

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
August 25, 2005 October 27, 2005 February 23, 2006	3	Supplemental Specification 00555M, Prosecution and Progress, Limits of Operation: Coordinate the required action to have the process placed in the proper location, to the detail necessary and bring the recommendation to the Standards Committee for approval. Item not ready. To be reviewed by the Operations Engineer. Target date updated. Direction being reviewed by upper management.	John Leonard	Open	Open. No date set.
October 27, 2005 February 23, 2006	4	Painted Cattle Guard issue to the Maintenance Operations Engineers. To be presented at UTRAC for further consideration. Target could be up to a year away.	John Leonard	Open	Date unknown
February 23, 2006	5	Hydraulics to create a Supplemental Specification to cover the cast-in-place option to go along with the precast option. When that section is ready both will be brought back for approval.	Michael Fazio	Open	April 2006 meeting
February 23, 2006	6	Standards Committee membership issues. Take to the Technical Committee. Policy changes brought back to the next meeting for approval.	Jim McMinimee Barry Axelrod	Open	April 2006 meeting

Closed Items From Last Meeting (February 23, 2006)					
Date Initiated/Updated	Prior Item #	Action	Assignments	Status	Target Date
June 30, 2005 August 25, 2005 October 27, 2005 February 23, 2006	3	Deviating from Standards: Form QIT to put together a policy to handle deviating from standards. Still in progress. Update at next meeting. Jim McMinimee to take the issue to the Department QIC meeting. New process implemented per direction from all region directors. Notice sent by Carlos Braceras and Web site updated.	Richard Miller Jim McMinimee Richard Miller	Closed	Closed
October 27, 2005 February 23, 2006	5	Standard Drawing DG 5, Plastic Pipe Culvert Bedding. The Hydraulics Section to revise drawing and create the remaining DG 5 series drawings to cover the other pipe types. Standard Drawing DG 5A, 5B, and 5C approved.	Michael Fazio	Closed	Closed
October 27, 2005 February 23, 2006	6	Supplemental Specification 02633, Precast Concrete Drainage Structures. Hydraulics to set up meeting with interested parties to incorporate inputs and testing requirements. Item ready but will be grouped with cast in place. A new item will be opened.	Michael Fazio	Closed	Closed

October 27, 2005 February 23, 2006	7	Discussion of integration of the AASHTO Green Book and the MUTCD with respect to roadway design. Direction set. AASHTO used for design.	FHWA - Todd Emery - Roland Stanger	Closed	Closed

Standards Committee Agenda Items Section

Submittal Sheets, Supplemental Specification Drafts, Standard Drawing Drafts, and other supporting data for the April 27, 2006 Standards Committee meeting follows.

Standards Committee Submittal Sheet

Name of preparer: Jim Baird
Title/Position of preparer: Right-of-Way Manager
Specification/Drawing/Item Title: Boundary Survey
Specification/Drawing Number: 02896

Enter appropriate priority level:
(See last page for explanation) **3**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

The method of stamping and documenting Right-of-Way markers on record of survey maps has changed.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

No change

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

No comments

ACEC Comments: (Use as much space as necessary.)

Comment returned stated there was no objection to the change.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Region Right-of-Way managers

No comments

Consultants (as required) (Any additional contacts beyond "C" above.)

No comments

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

No comments

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N/A

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

N/A

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

N/A

3. Life cycle cost.

N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Way of doing business has changed to comply with Rule.

H. Safety Impacts?

N/A

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

N/A

Supplemental Specification
2005 Standard Specification Book

Section 02896M

BOUNDARY SURVEY

Delete Article 3.1, paragraph A and replace with the following:

A. Place Right-of-Way Markers in accordance with GW series Standard Drawings. Stamp onto each Right-of-Way Marker:
   1. Right-of-Way marker number
   2. Exact control point location to within 0.01 feet

Add the following to Article 3.3, paragraph C:

7. On each record of survey map, tabulate right-of-way markers showing station, elevation, and project coordinates.

Standards Committee Submittal Sheet

Name of preparer: Larry A. Myers and Karl Verhaeren
Title/Position of preparer: Project Controls Engineer/ Engineer for Construction
Specification/Drawing/Item Title: 00555, Prosecution and Progress; 00725, Scope of Work; 00727, Control of Work; and 01282, Payment.
Specification/Drawing Number:

Enter appropriate priority level:
(See last page for explanation) **3**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

The changes made to the specifications noted above do the following:

- Tightens the contract requirements for submitting claims. Currently most claims are submitted well after the fact, make the resolution thereof difficult. These changes to the specifications require the contractor to submit claims as the delay-causing event occurs or risk forfeiting reimbursable expenses.
- Better defines what claim related costs are reimbursable, what each element of the reimbursable costs includes and how to record such costs in the field as they occur.
- The Department/AGC joint Partnering Task Force committee and AGC has requested that partnering training be a mandatory requirement for the contractor's superintendents and Department resident engineers on all projects. The proposed change requiring training for the contractor's principal representative on the project is consistent with Department goals.
- The specification only deals with contractor personnel, as requirements for Department personnel are handled through other instruments.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Does not directly affect Measurement and Payment.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

This information was given to AGC. Mont Wilson reviewed the changes, deferring comment to Norm Avery. Norm Avery of Geneva was assigned the responsibility of working out the wording of these changes with UDOT Construction (Larry Myers). The specification changes submitted reflect the wording that Norm and Larry agreed to.

ACEC Comments: (Use as much space as necessary.)

These changes do not directly affect ACEC so they were not involved.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

These changes were given to the RCE to review with the RE's. The comments returned were included in the final documents. No additional comments received from the April 6, 2006 RCE meeting.

Construction Engineers

See above.

Contractors (Any additional contacts beyond “C” above.)

None

Suppliers

None. They are not directly impacted.

Consultants (as required) (Any additional contacts beyond “C” above.)

None. They are not directly impacted.

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

Larry Myers discussed this with Todd Emery. Todd agreed in concept and did not want to see the actual documents.

Others (as appropriate)

None.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

No impact.

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

None.

Negligible for partnering change.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

No impact.

3. Life cycle cost.

   No life cycle impact.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

   Allows us to deal with claims as they happen; allowing us to mitigate expenses. Potentially these changes can save UDOT over $1,000,000 per year.

   Intent of the Partnering Task Force and initiative is to make partnering principles a part of the culture of both the Department and contracting personnel.

H. Safety Impacts?

   No safety impacts.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

   No previous reviews of these proposed changes.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Supplemental Specification
2005 Standard Specification Book

SECTION 00555M

PROSECUTION AND PROGRESS

Delete Article 1.6, paragraph A and replace with the following:

A. Develop a baseline construction schedule using Primavera 5.0 (or the current version) or Primavera Contractor. Accurately reflect in the schedule the proposed approach to accomplish the work outlined in the Contract documents conforming to all requirements of this article.

Delete Article 1.8 and replace with the following:

1.8 CONSTRUCTION SCHEDULE DELAYS

A. A construction schedule delay is defined as an event, action, or other factor that impacts the critical path of the construction schedule and extend~~sing~~ the time needed to complete the construction project. There are four types of delays:

1. **Excusable Delay** – An excusable delay is one caused by an unforeseeable event beyond the Contractor's control. Such delays, where the Contractor may be granted added time but no additional money, include, but are not limited to, acts of God, acts of public enemies, fires, floods, area wide strikes, utility conflicts, and unusually severe weather.
2. **Compensable Delay** – A compensable delay is one solely caused by the Department or its representatives. Such delays include, but are not limited to, Department ordered suspension of the work, design errors, and differing site conditions. Compensable delays may entitle the Contractor to additional time and monetary compensation.
3. **Inexcusable Delay** – An inexcusable delay is one that the Contractor could have foreseen and prevented but failed to do so. In such cases, the Contractor is responsible for all cost and time impacts resulting from the delay for all parties affected. Examples of events that cause inexcusable delays include weather or failure by the Contractor to assign sufficient resources to the project.

4. **Non-Critical Delays** ~~—~~ Non-critical delays are delays, regardless of cause, that do not impact the critical path of the project. No added time or monetary compensation is given the Contractor for such delays. The amount of time the delay affects the critical path will be handled as defined above i~~I~~f the delay ~~is sufficiently long to eventually~~ places the impacted activities~~y(s)~~ on the critical path of the construction schedule.~~,~~ ~~the time period the delay affects the critical path will be handled as defined above.~~

B. Upon determining critical activities have been delayed, document in project meeting minutes or provide written notification to the Engineer within seven calendar days of the delay-causing event. Provide detailed information including:

1. ~~The e~~Events that caused the delay.
2. Parties~~y(s)~~ responsible for the events.
3. Activities in the construction schedule affected by the events.
4. ~~The m~~Magnitude of the delay using the current ~~update of the~~ construction schedule.

~~5~~a. Damages including time and monetary compensation ~~If notice of a potential or real delay is not provided in writing or documented in meeting minutes within seven calendar day of the delay-causing event, then damages (including time and monetary compensation)~~ will be limited to those incurred after written notice is received by the Engineer if notice of a potential or real delay is not provided.

C~~6~~. The Department will not accept nor compensate any notice of claim submitted later than 30 days after the Substantial Completion date of the Project.

D~~C~~. The Engineer reviews the request and within ~~14 7~~seven calendar days provides a written response to the Contractor. ~~If the Engineer agrees with the request, a~~A time extension and added compensation, if applicable, will be granted under the terms of the Contract if the Engineer agrees with the request.

~~D~~E. ~~If the Engineer disagrees with the request, a~~ A clear explanation will be included in the letter if the Engineer disagrees with the request. This letter serves as formal rejection of the request by the Department.

F~~E~~. Once a delay-causing event is identified, take all reasonable steps needed to minimize the impact of the delay. Failure to do so may result~~s~~ in the rejection of ~~all or~~ part of the delay claim.

G. Time will be added to the ~~c~~Contract based on the overall extension of the critical path of the project schedule attributed to the delay-causing event. Any request for a time extension must be supported by a schedule analysis showing the impact of the delay-causing event on the schedule. Provide the Engineer with the schedule

analysis. The Engineer will review the schedule analysis and provide a written response to the Contractor describing any concerns or points of disagreement.

H. Compensable costs will be determined as follows:

1. Direct Costs~~. Direct costs~~ are ~~costs~~ specifically identified with a particular contract work activity. Direct costs ~~associated with~~of a delay are the Contractor's actual costs of its work force and idle equipment ~~idled by the delay~~. Calculate r~~R~~ates for labor, materials, and equipment ~~shall be calculated in the manner~~as defined in ~~Specification~~ Section 01282~~, Paragraphs 1.6 to 1.12, Force Account Work~~.

2. Quantify costs daily during a delay-causing event, ~~—~~listing the manpower and idle equipment ~~idled~~. Provide a daily written cost report ~~daily~~ to the Engineer~~,~~ or designated representative~~,~~ for review. ~~If the Engineer or representative agrees with the costs, t~~TThe Engineer or representative ~~will~~ signs the daily cost report showing agreement with the costs. ~~If the Engineer or representative does not agree with the Contractor's assessment, T~~the Engineer and the Contractor will ~~should~~ make an effort to reach an agreement if they do not agree with the Contractor's assessment. ~~If agreement cannot be reached, t~~The Engineer will provide a detailed explanation of the differences if agreement cannot be reached ~~—~~ and attach it to the daily cost report.

3. Field Indirect Costs~~. Field indirect costs~~ are actual job specific costs that are not directly associated with a particular work activity such as job-site supervision and field office operating costs. Calculate r~~R~~ates for labor, materials, and equipment ~~shall be calculated as~~ ~~in the manner~~ defined in ~~Specification~~ Section 01282~~, Paragraphs 1.6 to 1.12, Force Account Work~~.

4. Identify, measure, and report the indirect field costs attributable to the delay-causing event. Provide a daily report of these costs ~~daily~~ to the Engineer ~~in the same manner~~ as described above for the Direct Costs.

5. Unabsorbed Home Office Overhead~~. Unabsorbed home office costs~~ are ~~home office~~ overhead expenses norma~~t~~lly ~~that would have been~~ paid for by the project billings if the work had not been delayed. To be reimbursed for home office overhead costs, demonstrate that the delay-causing event resulted in financial harm. Such costs will be reimbursed as follows:

   a. No unabsorbed home office overheads will be reimbursed for the first five calendar days of the delay-causing event. If the project is between 0 ~~%~~ and 95 percent~~%~~ complete, home office overhead

costs will be reimbursed from the sixth calendar day of the delay-causing event through its end ~~of~~ per the following formula:

D = E~~*~~[.05(A-B)/C]

Where:

.05 = allowed markup for home office overhead~~.~~
A = current contract value~~.~~
B = value of work completed to date based on the most recent partial estimate prepared prior to the submittal of the delay claim~~.~~
C = ~~-~~current total contract duration, measured in calendar days, including time added for scope changes but not delay claims~~).~~
D = reimbursable amount for unabsorbed home office overhead per day of a delay-causing event~~.~~
E = Number of days the critical path of the schedule is delayed due to the delay-causing event minus 5. ~~If this number is negative, then n~~No unabsorbed home office overheads will be reimbursed if this number is negative, then.

b. ~~If the delay occurs after the project is 95 percent~~% ~~complete, n~~No home office overheads will be reimbursed if the delay occurs after the project is 95 percent complete. Calculate p~~P~~ercent complete ~~will be calculated~~ by dividing the cumulative value of partial estimates submitted as of the date of the claim by the total value of the contract.

6. The total reimbursable cost for a compensable delay is the sum of the daily agreed to costs of direct costs, field indirect costs, and unabsorbed home office overhead costs as computed above, for the duration of the delay. No other costs, including profit, will be reimbursed.

Supplemental Specification
2005 Standard Specification Book

SECTION 00725M

SCOPE OF WORK

Delete Article 1.1 and replace with the following:

1.1 RELATED SECTIONS

A. Section 00555: Prosecution and Progress

B. Section 01282: Payment

C. Section 01355: Environmental Protection

D. Section 01741: Final Cleanup

Add Article 1.2, paragraph B:

B. UDOT Partnering Field Guide

Delete Article 1.4 and replace with the following:

1.4 PARTNERING

A. Partnering does not change the legal relationship of the parties to the cContract, and does not relieve either party from any of the terms of the cContract.

B. The Department encourages the formation of a strong partnership among the Department, the Contractor, and the Contractor's principal subcontractors. This partnership draws on the strengths of each organization to identify and achieve mutual goals.

C. Implement partnering in accordance with UDOT's Partnering Field Guide. Refer to http://www.udot.utah.gov/index.php/m=c/tid=719.

1. Determine jointly between the Contractor and Engineer to either use an independent third party firm to implement facilitated partnering or to jointly share in those responsibilities. Determine jointly between tThe Contractor and Engineer determine a facilitator for the meeting and

determine attendees, agenda, duration, and location of a partnering workshop.

2. Contact the Engineer within 30 days of Notice of Award and before the Preconstruction Conference to implement a third party facilitated partnering initiative.

D. Both the Department and the Contractor agree to~~,~~ and share equally any costs to accomplish partnering.

E. Use UDOT's Partnering Field Guide to determine workshop attendance. Refer to http://www.udot.utah.gov/index.php/m=c/tid=719.

F. Follow-up workshops may be held periodically as agreed by the Contractor and the Department.

Delete Article 1.5 and replace with the following:

1.5 DIFFERING SITE CONDITIONS, CHANGES, AND EXTRA WORK

A. Promptly notify the Engineer in writing or as documented in project meeting minutes of alleged changes to the c~~C~~ontract due to differing site conditions, extra work, altered work beyond the scope of the c~~C~~ontract, or actions taken by the Department that change the c~~C~~ontract terms and conditions. Conditions to report include:

1. Conditions differing materially from those indicated in the c~~C~~ontract.
2. ~~2.~~ Unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent to the work provided for in the c~~C~~ontract.
3. Any other condition or event that may result in a request for a change to the contract time or price.

B. Do not perform further work or incur further contract item expense relating to the claimed change after the date the change allegedly occurred, unless directed otherwise in writing by the Engineer.

C. ~~Immediately notify the Engineer verbally of the alleged change or extra work occasioned by differing site conditions or actions by the Department.~~ Provide the Engineer with the following applicable information ~~to the Engineer~~ in writing within ~~five~~ seven calendar days of the date the change or action was noted:

1. The date, ~~of occurrence and the~~ nature, and circumstances of the occurrence that constitute a change.
2. Name, title, and activity of each Department representative with knowledge~~able~~ of the claimed change.

3. ~~Identity of any d~~Documents and the substance of any oral communication involved in the claimed change.
4. Basis for a claim of accelerated schedule performance, if applicable.
5. Basis for a claim that the work is not required by the c~~C~~ontract, if applicable.
6. Failure to provide the required notice constitutes a waiver of any and all claims that may arise as a result of the alleged change. The Department does not allow adjustments to the ~~C~~contract that benefit the Contractor unless the Contractor has provided the required written notice.

D. ~~Particular elements of contract performance for which a~~Additional compensation may be paid for~~sought include~~:
1. Pay items that have been or may be affected by the claimed change.
2. Labor or materials, ~~or both, that are~~ added, deleted, or wasted by the claimed change including idle or required ~~and what~~ equipment ~~is idled or required~~.
3. Delay and disruption in the manner and performance sequence. ~~of performance that has been or will be caused.~~
4. Adjustments to contract prices, delivery schedules, staging, and estimated contract time ~~estimated due to the claimed change~~.
5. Estimate of the time within which the Department must respond to the notice to minimize cost, delay, or disruption of performance.

E. After notifying the Engineer~~,~~ and in the absence of directions received to the contrary from an authorized representative of the Department, continue diligent prosecution of the work under the ~~C~~contract unaffected by the alleged changes to the maximum extent possible under the contract provisions.

F. Within ~~10~~ ~~7~~seven calendar days after receipt of notice, the Engineer responds in writing to the Contractor to:
1. Confirm that a change occurred and, when necessary, direct the method and manner of further performance. ~~, or~~
2. Deny that a change occurred and, when necessary, direct the method and manner of further performance ~~, or~~
3. Advise the Contractor that information necessary for deciding to confirm or deny the change has not been submitted~~,~~ and indicate what information is needed for further review and a date by which the information is due ~~Contractor should submit it to the Engineer~~. The Engineer responds to such additional information within 10 calendar days of receipt from the Contractor.
4. Modify the c~~C~~ontract ~~in writing accordingly~~.

G. Any adjustments made to the c~~C~~ontract do not include increased compensation or time extensions for delay resulting from the Contractor's failure to provide additional information requested by the Engineer.

Delete Article 1.7 and replace with the following:

1.7 SUSPENSIONS OF WORK ORDERED BY THE ENGINEER

A. Follow the process for addressing construction delays under Section 00555 ~~I~~if the Engineer, in writing, suspends or delays ~~in writing~~ the performance of all or any portion of the work for an unreasonable period of time ~~(~~not originally anticipated, customary, or inherent to the construction industry~~),~~ and the Contractor believes that additional compensation or contract time or both are due as a result of such suspension or delay., ~~follow the process for addressing construction delays under Section 00555, Prosecution and Progress, Paragraph 1.8. submit to the Engineer a written request for adjustment within seven calendar days of receipt of the notice to resume work. Explain in the request the reasons and support for such adjustment.~~

~~B. Upon receipt of request, the Engineer:~~

~~1. Evaluates the request.~~

~~2. Adjusts (excluding profit) and modifies the Contract in writing accordingly, if the Engineer agrees that:~~

~~a. The suspension increased the cost and/or time required for the performance of the Contract.~~

~~b. The suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier.~~

~~c. The suspension was not caused by weather.~~

~~C. The Engineer notifies the Contractor of whether or not an adjustment of the Contract is warranted.~~

~~D. Department does not allow adjustment to the Contract unless the Contractor has submitted the request for adjustment within seven calendar days of receipt of the notice to resume work.~~

B~~E~~. The Department does not allow adjustments to the ~~C~~contract to the extent that performance will ~~ould have~~ be~~en~~ suspended or delayed by any other cause~~,~~ or for which an adjustment is provided for or excluded under any other term or condition of the~~is C~~ contract.

Add the following to article 1.18 Paragraph C:

1. The Department does not accept VE proposals related to pavement section structure, strength, or performance.

Delete article 1.18 Paragraph D and replace with the following:

D. The Department rejects proposals that provide equivalent options to those already in the contract.

Delete article 1.18 Paragraphs E – I and replace with the following:

E. The Department may reject proposals that:
   1. Contain revisions the Department is already considering or has approved for the ~~C~~contract.
   2. Do not generate sufficient savings.
   3. Do not provide additional information as requested by the Department including requests for field investigation results and surveys, design computations, and field change sheet for proposed design changes.

F. ~~If the proposal is rejected, t~~The Contractor has no claim to additional costs or delays, including development costs, loss of anticipated profits, or increased material or labor costs if the proposal is rejected.

G. The Engineer can reject all unsatisfactory work resulting from an approved proposal.
   1. Remove rejected work and reconstruct under the original contract provisions at no additional cost to Department.
   2. Reimbursement for modifications to the proposal to adjust field or other conditions is limited to the total amount of the contract bid prices.
   3. Rejection or limitation of reimbursement is not basis for any claim against the Department.

H. The Department does not consider savings generated by contingency items when it is reduced as part of a VECP, unless it can be tied to a reduction in contract time.

Supplemental Specification
2005 Standard Specification Book

SECTION 00727M

CONTROL OF WORK

Add the following to Article 1.7 paragraph B:

1. The superintendent must complete Phase I Partnering Training by the Department before work begins on the project, or be registered for and attend the next available training session.

Delete Article 1.20 and replace with the following:

1.20 PROCEDURES FOR DISPUTE RESOLUTION

A. ~~A.~~ Notify Department verbally and in writing of any potential claim or dispute related to differing site conditions or extra work~~the~~ ~~dispute~~ in accordance with Section 00725 or within seven-calendar days for all other issues. ~~before beginning or continuing~~ Do not begin or continue the affected work unless directed by the Engineer in writing or as documented in the project meeting minutes~~,~~ if additional compensation is considered due for work or material not covered in the c~~C~~ontract.~~, unless directed by the Engineer in writing or as documented in meeting minutes~~.

B. ~~If notice is not provided as defined above, d~~Damages will be limited to those incurred after the Engineer is notified in writing ~~(~~either by letter or in meeting minutes~~)~~ if notice is not provided as defined above.

C~~B~~. The Engineer responds as described under Section 00725 following notification~~,~~ for differing site conditions or extra work and within ~~7~~seven calendar days for all other issues, ~~indicates~~ indicating whether or not a change has occurred~~,~~ and provides further information concerning the method and manner of further performance of the work.

D~~C~~. ~~Provide cooperation and information to~~Cooperate with and inform the Engineer during the period of notification review and evaluation.

E~~D~~. ~~Department does not grant additional compensation if verbal and or written notification is not given, or if the Engineer is not given proper facilities for keeping strict account of actual costs.~~

~~1. Department does not construe notice by the Contractor, and the Engineer's accounting of costs as substantiating the validity of the claim.~~

~~2. Department equitably adjusts the Contract if the dispute is found to have merit.~~

Supplemental Specification
2005 Standard Specification Book

SECTION 01282M

PAYMENT

Add the following to Part 1, Article 1.1:

D. Section 01284: Prompt Payment

Delete Article 1.6 and replace with the following:

1.6 FORCE ACCOUNT WORK - GENERAL

A. ~~A.~~ Instead of a unit price or lump sum basis specified above, the Department may require the Contractor to do such work on a force account basis.

B. ~~Department does not make additional allowance for~~ Reimbursable rates for force account labor, materials, equipment, and subcontractors defined in this Section, Articles 1.7 through 1.11 ~~below~~ include:

1. ~~Timekeepers, bookkeepers, or other general office help~~ All field indirect costs including but not limited to the project manager, project superintendent ~~—~~except for time spent in direct supervision of the force account work, other field office staff, field office operating costs, small tools costing less than $100 each, etc.

2. ~~General superintendent except for the time spent in direct supervision of the force account work~~ All home office overhead costs incurred as a result of the force account work.
3. ~~The use of small tools (tools costing $400 or less) or other costs for which no specific allowance is herein provided~~ All other costs not directly part of the actual construction of the force account work.

C. Department does not pay for pickup trucks used solely for transportation.

D. Department pays straight time for all hours worked. Overtime must have the prior written approval of the Engineer.

Delete Article 1.14, paragraph E and replace with the following:

E. From the total value of work, the Department deducts and retains five percent until after the entire ~~C~~contract has been completed in an acceptable manner, with the following exceptions:

a. Retention for subcontracted work paid upon satisfactory completion and acceptance by the Department. Refer to Section 01284.

b. When no less than 95 percent of the work has been completed~~,~~ and with the consent of the Surety, the Engineer may prepare a semi-final estimate from which the Department retains 1½ percent of the original contract amount. The Department certifies the remainder for payment, less all previous payments.

Standards Committee Submittal Sheet

Name of preparer: **Karl Verhaeren**
Title/Position of preparer: **Engineer for Construction**
Specification/Drawing/Item Title: **Profilograph and Pavement Smoothness**
Specification/Drawing Number: **Section 01452**

Enter appropriate priority level:
(See last page for explanation) **3**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

Specification 01452 provides for a smoothness incentive/disincentive on the final riding surface, computed on the basis of "sections," essentially defined as 0.1 lane mile(s). The definition also considers shoulders with design widths greater than 8.0 feet as separate "sections" in addition to the travel lanes.

The maximum incentive amounts provided for under Section 01452 are as follows:

HMA =	$2100,	$3000/lane mile
OGSC & SMA =	$7000,	$7500/lane mile
PCCP =	$8750,	$10000/lane mile

The lesser amounts shown above are for category II surfaces, the higher amounts are for category 1.

The proposed modification to the specification changes the definition of "section" by removing shoulders, and only considers traffic lanes as "sections." Shoulders greater than 6.0 feet are still measured for smoothness and shoulder measurements are included with the adjacent lane measurements. This change brings potential incentive/disincentive amounts in line with that offered by other State Highway Agencies.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

No change

C. Stakeholder Notification for AGC and ACEC:

The proposed change was sent to the AGC and ACEC on March 23, 2006.

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

No comments received by April 6, 2006.

ACEC Comments: (Use as much space as necessary.)

No comments received by April 6, 2006.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

No comments received from the April 6, 2006 RCE meeting.

Contractors (Any additional contacts beyond “C” above.)

No comments.

Suppliers

No comments.

Consultants (as required) (Any additional contacts beyond “C” above.)

No comments.

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

No comments.

Others (as appropriate)

No comments.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

No effect to the MS&T requirements

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.
   N/A

   There is no change to overall project costs, as incentive/disincentives are considered to be accounted for in the contractor’s bid, with unit bid prices being adjusted by the contractor based on the potential incentive/disincentive amounts expected to be earned/lost according to the contract incentive/disincentive provisions.

   While still offering a substantial incentive/disincentive, the change will help with project cost control by reducing the difference in project bid cost vs. final cost, neglecting contract changes or modifications.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).
   None

3. Life cycle cost.
   N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)
Better project cost control as described above. Reduced calculations to compute incentives on paving projects having shoulders greater than 8 feet.

H. Safety Impacts?
None

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

This modification has been used as a special provision in Region 4 on several contracts, primarily to reduce the maximum incentive available on interstate projects and bring the potential incentive/disincentive in line with the pavement smoothness incentive/disincentives offered by other DOTs.

Incorporates previously issued Supplemental Specification for Article 3.1, paragraph B1.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Supplemental Specification
2005 Standard Specification Book

SECTION 01452M

PROFILOGRAPH AND PAVEMENT SMOOTHNESS

Delete Article 1.5, paragraph B and replace with the following:

B. The Department evaluates the surface by section, defined as:
   1. Traffic lane, 0.1 mile in length, including adjacent shoulder, meeting the Class I description. (See Table 1)
      a. Testing consists of a single trace measurement of each wheel path, defined as a continuous parallel line 2.5 ft inside the projected lane lines, of the traffic lane.
      b. Testing of adjacent shoulder consists of a single trace measurement approximately centered in the shoulder when the design width is 6.0 ft or greater. Do not test shoulders having design widths less than 6.0 ft.
      c. Determine the Profile Index (PI) by taking the average of all profile traces taken on the section.

Delete Article 3.1, paragraph B1 and replace with the following:

1. Incentive/Disincentive applies only to Class I surfaces for each pavement section defined in this Section, Article 1.5, paragraph B.
   a. Incentive/Disincentive is calculated according to Table 2, with partial sections prorated based on length.
   b. Incentive/Disincentive does not apply to HMA surfaces on projects requiring OGSC or SMA.
   c. Any section requiring grinding exceeding 20 yd^2 does not qualify for incentive. Disincentive remains applicable for sections where grinding exceeds 20 yd^2.

Standards Committee Submittal Sheet

Name of preparer: Michael Fazio
Title/Position of preparer: Chief Hydraulics Engineer
Specification/Drawing/Item Title: Concrete Drainage Structures
Specification/Drawing Number: 02633

Enter appropriate priority level:
(See last page for explanation) **3**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This is a new standard. Currently there is not a standard specification for precast concrete drainage structures. Increasingly contractors are placing precast concrete drainage structures in UDOT project without clear guidelines or guidance for acceptable installations. The Department experienced several failures of these installation that become a maintenance nuisance.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

There are no current requirements for measurement and payment of precast concrete structures. The proposed measurement and payment would be by the each, with incremental unit price per foot for larger units.

C. Stakeholder Notification for AGC and ACEC:
A doc file of the specification was sent to Mont Wilson and Tyler Yorgason by e-mail.

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

No comments

ACEC Comments: (Use as much space as necessary.)
No comments to the first version
No comments

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers:
Karl Verhaeren is part of the team that wrote the specification.

The spec was sent to all Region Construction Engineers: we did not receive any comments.

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

Others (as appropriate)

Boyd Wheeler	**Brandon Tucker**
Brent Schvaneveldt	**Brent Jensen**
Carlos Machado	**Daryl Friant**
Clark Mackay	**Denis Stuhff**
Dennis Simper	**John Higgins**
Karl Verhaeren	**Kris Peterson**
Keith Brown	**Marwan Farah**
Rex Harris	**Robb Edgar**
Rob Wight	**Tim Ularich**
Scott Andrus	**Todd Jensen**
Tim Rose	**Paul Egbert**

Boyd Wheeler was part of the team writing the new spec.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

The new spec requires that plant supplying drainage structures be part of UDOT pre-approved plants. These plants will undergo independent testing of their product according to the program.

F. Costs? (Estimates are acceptable.)

This new specification will help reduce the cost by allowing standardization of precast drainage structures furnished to UDOT.

1. Additional costs to average bid item price.
   Reduced costs: the designer will have the option to use precast products instead of cast in place. The free market competition between cast in place and precast should drive the cost of drainage structures down. As sizes become standardized the industry will be more efficient in making and supplying the product.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

   Better products and reduced maintenance because of the new requirements to seal pipe connections and improve the overall quality of the product

3. Life cycle cost.

Reduced life cost. Material will last longer because of improved quality controlled from pre-approved plants.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Better products to the Department, easier installation, easier method of payment.

H. Safety Impacts?

No impacts to safety

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Currently contractors are installing precast drainage products without any specifications. Many products come to the project in poor conditions. There have been some pavement failures because of the lack of specification requirements. Currently the Department pays for drainage boxes by the weight of steel and volume of concrete. This method of payment is time consuming and unreliable.

This specification was originally submitted for the February 2006 meeting for Precast Concrete Drainage Structures only. It now covers Concrete Drainage Structures combined into one specification.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Supplemental Specification
2005 Standard Specification Book

SECTION 02633

CONCRETE DRAINAGE STRUCTURES

Add Section 02633:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials and procedures for constructing concrete drainage structures from the CB and DB Series Standard Drawings.

1.2 RELATED SECTIONS

A. Section 01721: Survey

B. Section 02324: Compaction

C. Section 02635: Grates, Solid Covers, Frames, and Manhole Steps

D. Section 03055: Portland Cement Concrete

E. Section 03056: Self-Consolidating Concrete (Special Provision)

F. Section 03152: Concrete Joint Control

G. Section 03211: Reinforcing Steel and Welded Wire

H. Section 03310: Structural Concrete

I. Section 03390: Concrete Curing

1.3 REFERENCES

A. AASHTO M 198: Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets

B. AASHTO M 199: Precast Reinforced Concrete Manhole Sections

C. AASHTO M 213: Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)

D. AASHTO M 235: Epoxy Resin Adhesives

E. AASHTO M 315: Joints for Circular Concrete Sewer and Culvert Pipes Using Rubber Gaskets

F. AASHTO Standard Specification for Highway Bridges

G. ASTM C 361: Standard Specification for Reinforced Concrete Low-Head Pressure Pipe

H. ASTM C 443: Joints for Concrete Pipe and Manholes, Using Rubber Gaskets

I. ASTM C 478: Precast Reinforced Concrete Manhole Sections

J. ASTM C 857: Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures

K. ASTM C 858: Standard Specification for Underground Precast Concrete Utility Structures

L. ASTM C 891: Installation of Underground Precast Concrete Utility Structures

M. ASTM C 1107: Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

N. ASTM C 1244: Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test Prior to Backfill

O. UDOT Quality Management Plans

1.4 DEFINITIONS

A. This specification is applicable for the following defined products:
   1. Catch Basin/Drop Inlet: A structure accepting drainage from gutters or medians or other channels and discharging the water through a conduit. Refer to the CB and DB Series Standard Drawings for shape and dimensions of Standard Catch Basins.
   2. Inlet: A grated surface connection to a closed conduit such as a storm drain. A structure at the upstream end of a cross culvert. The upstream end of any structure through which water may flow.

3. Manhole (access hole): A circular structure for access and joining pipes. Refer to the CB Series Standard Drawings for the Standard Detail for a Manhole.

1.5 SUBMITTALS

A. Submit concrete mix design for approval in accordance with Section 03055 or 03056 (Special Provision).

B. Precast structures:
   1. Provide verification the structures are furnished by a Department pre-qualified precast supplier.
   2. Submit a Certificate of Compliance from UDOT Central Materials upon delivery to the project.

1.6 ACCEPTANCE

A. Construct cast-in-place or install precast drainage structures meeting the requirements of this section and all other applicable requirements.

B. Repair or replace any structure that has the following:
   1. Fractures or cracks passing through the wall, except for a single end crack that does not exceed the thickness of the precast unit.
   2. Defects showing improper proportioning, mixing, or molding.
   3. Honeycombing and open texture.
   4. Damaged or cracked ends that prevent joining manhole/inlets grade rings and sections.
   5. Any continuous crack having a surface width of 0.01 inch or more that extends more than 12 inches anywhere on the wall.
   6. For grade rings or similar structures limit cracks or fractures according to ASTM C 478.

   Submit repair procedure to the Engineer for approval prior to performing any repairs.

C. Precast structures:
   1. Furnish precast drainage structures in conformance with the CB Series Standard Drawings.
      a. Pre-qualify the supplier in accordance with the UDOT Quality Management Plan: Precast/Prestressed Concrete Structures.
      b. Furnish precast structures that are plumb and square within 1/8 inch per foot so that precast adjoining elements fit.
      c. Mark structures with date of casting and supplier identification.

D. Upon completing each installation, and before placing backfill, obtain acceptance from the Engineer.
   1. Verify the structures and pipe connections appear watertight.
   2. When directed by the Engineer, test in accordance with this Section, article 3.3.

PART 2 PRODUCTS

2.1 CONCRETE

A. Wet cast: Class AA-AE, see Section 03055.

B. Dry cast: Submit mix design for approval.
   1. Minimum cement content: 470 lb/yd^3
   2. Maximum water/cementitious ratio: 0.4

C. Self-Consolidating Concrete: Follow Section 03056 (Special Provision).

2.2 REINFORCING STEEL AND WELDED WIRE

A. Refer to Section 03211.

B. Use coated reinforcing steel.

2.3 STRUCTURAL CONCRETE

A. Refer to section 03310

2.4 JOINTS AND SEALERS

A. Preformed Joint Filler: AASHTO M 213 and AASHTO M 198.

2.5 WATERSTOPS

A. Refer to Section 03152 for materials requirements.

B. Refer to AASHTO Standard Specification for Highway Bridges, Division II, Subsection 8.9.3.4 for installation requirements.

2.6 NON-SHRINK GROUT

A. Use non-shrink grout conforming to ASTM C 1107.

2.7 CURING COMPOUND

A. Refer to Section 03390.

2.8 FORMS

A. Use plywood, wood, metal, glass, or a combination of these materials.

2.9 GASKETS AND JOINT SEALANTS FOR CONNECTING PRECAST SECTIONS

A. Furnish gaskets for sealing precast sections that meet ASTM C 443 requirements.

B. Furnish gaskets for sealing precast concrete manholes that meet AASHTO M 315.

C. Furnish epoxy resin adhesive according to AASHTO M 235.

D. Furnish "O" Ring per ASTM C 361 as shown in the CB Series Standard Drawings.

2.10 MANHOLE/FRAME GASKET

A. Place ¾ inch diameter minimum extruded rope Type B flexible plastic gaskets between the manhole frame and the concrete risers that meet AASHTO M 198 requirements.

2.11 JOINTING MASTIC

A. Furnish a water resistant elastic jointing mastic of plastic bituminous materials and inert fillers that when applied to a vertical metal surface and heated to 120 degrees F does not loose slump or plasticity.

B. Furnish joint mastic that can be applied evenly and adhere at temperature range of 40 to 120 degree F or higher.

2.12 GRATES, SOLID COVERS, FRAMES, AND MANHOLE STEPS

A. Refer to Section 02635.

PART 3 EXECUTION

3.1 PREPARATION

A. Before manufacturing or constructing any structure, verify and ensure fit and function with field conditions. Refer to Section 01721.

B. Furnish structures free of voids, cracks, and with beveled corners and edges. Securely attach all inserts in the proper location. Prevent cold joints in the structure.

C. Clean and prepare the mating surfaces before assembly of pipes with structure.
   1. For precast, use one of the following methods to connect the pipe(s) to the structure:
      a. Pipe boot according to pipe manufacturer specifications for pipe type.
      b. Non-shrink grout to seal the pipe connection.

D. Excavate the material under the box location to a minimum depth of 4 inches, and backfill with suitable backfill material and compact.
   1. Excavate sufficiently to place and compact bedding and backfill material in accordance with Section 02324.
   2. Add as needed a sand-leveling course no greater than 2 inches in depth to the backfill material. When used, excavate the area to the appropriate depth to accommodate the backfill and leveling course.

3.2 INSTALLATION

A. Manholes: Furnish precast concrete manholes that conform to CB Series Standard Drawings, meet ASTM C 478 requirements, and have self-centering watertight joints that meet ASTM C 443 requirements.

B. Grade Rings/Catch Basin Grade Sections: Furnish grade rings or catch basin grade adjustment according to ASTM C 478, with anchor bolt-holes as shown on the CB Series Standard Drawings.

C. Precast Inlets and Boxes:
   1. Furnish structures conforming to CB Series Standard Drawings.
      a. Attach and secure all inserts at the place of manufacture such as wall sleeves, gaskets or piping, sumps, steps, access hatches, and any other inserts as shown on the plans or CB Series Standard Drawings.

2. Manufacture structures according to applicable requirements of ASTM C 858, and as modified by this Section.
    a. Meet AASHTO M 199 and ASTM C 857 requirements.
3. Provide sufficient lifting points for a safe installation.
    a. Locate lifting devices to avoid interference with the reinforcing steel.
4. Do not move precast units until after 28-day compressive strength has been attained.
    a. Protect the unit from any damage. Replace unacceptable units at no additional cost to the Department.
5. Follow ASTM C 891. Comply with manufacturer installation guidelines.
    a. Inspect precast drainage structures for defects before lowering into excavation.
    b. Clean mating surfaces of all foreign materials such as dirt, mud, stones, etc. and apply proper joint sealing material where applicable.
    c. Assemble all joints tightly.
    d. Use care when joining precast elements in cold weather. Do not force joints together with mechanical equipment. Sufficiently warm all sealing materials to flow without causing damage to precast joint elements.
6. Furnish structures with appropriate openings for connecting pipe.
    a. Cast or cut structure openings. Do not expose reinforcing steel or reduce reinforcing steel covering at openings.
    b. Do not modify precast units in the field by cutting or enlarging holes or by making any other changes without the manufacturer's and Engineer's approval.
    c. Modify precast units only according to manufacturer requirements.
7. Do not place precast drainage structure in excavation that has water and frozen surfaces.
8. Plug lift insert recesses with a 1:1 sand to cement grout mix. Finish flush with top and/or bottom surface of concrete.

3.3 TESTING

A. At the direction of the Engineer, upon failure of the visual inspection referenced in this Section, article 1.6, conduct either of the following tests to verify the drainage structures are watertight. Furnish all necessary equipment and materials. Repair and re-test at no additional cost to the Department any structures that fail any tests. Do not conduct Vacuum and Ex-filtration tests concurrently.

B. Vacuum Test: Follow the test procedure outlined below:

1. Vacuum test precast structures after assembly and prior to backfilling.
   a. Form a seal between the vacuum base and the manhole rim/precast structure cover. Secure pipe plugs to prevent movement while the vacuum is drawn.
   b. Draw a vacuum of 10 inches of mercury (Hg). Record the time for the vacuum to drop to 9 inches.
   c. Passing drop rates for the time to drop to 9 inches are as follows:

Diameter/Width	Time to Drop 1 inch Hg
up to 4 ft.	30 seconds
up to 5 ft.	40 seconds

   d. Make necessary repairs if the structure fails the test. Repairs and repair procedures must be acceptable to the Engineer.
   e. Disassemble the manhole and replace the gaskets if preformed plastic gaskets are pulled out during the vacuum test.

C. Ex-filtration Test: Follow test procedure ASTM C 1244 as modified below:

1. Plug all pipes leading into or out of the precast structure for a watertight seal.
2. Fill precast structure with water to a level three to four inches below the casting rim or lid.
3. Let the water stand for two-hours prior to beginning the test to allow absorption into the precast structure.
4. After the two-hour stabilization, place additional water to bring the water level back to three to four inches below the rim or lid.

5. Test for at least 2 hours and verify the leakage is less than shown on table 1.

Table 1

Precast Structure Ex-Filtration Test – Allowable Leakage						
Water Depth (measured from invert to water level)	**Allowable water drop per hour**					
(feet)	Maximum Horizontal Internal Dimension					
	4 ft.*		5 ft *		6 ft *	
	(gals)	(inches)	(gals)	(inches)	(gals)	(inches)
2	0.8	0.32	1.0	0.40	1.2	0.48
4	1.6	0.64	2.0	0.8	2.4	0.96
6	2.4	0.96	3.0	1.21	3.6	1.45
8	3.2	1.29	4.0	1.61	4.8	1.93
10	4.0	1.61	5.0	2.01	6.0	2.42
12	4.8	1.93	6.0	2.42	7.2	2.90
14	5.6	2.25	7.0	2.82	8.4	3.38
16	6.4	2.58	8.0	3.22	9.6	3.87
18	7.2	2.90	9.0	3.63	10.8	4.35
20**	8.0	3.22	10.0	4.03	12	4.84
* Adjust volume loss proportionally for different size not shown ** For greater depths provide an engineering analysis for equivalent ex-filtration rates.						

D. The Department will reimburse the Contractor for the actual cost of testing, not to exceed $500 per test, for each test required by the Engineer meeting vacuum or exfiltration requirements.

END OF SECTION

Standards Committee Submittal Sheet

Name of preparer: Todd Mac Gillvray, and Troy Peterson
Title/Position of preparer: Senior Engineer, and ITS Standards Engineer
Specification/Drawing/Item Title: Variable Message Sign; ATMS Standard Specifications
Specification/Drawing Number: Section 13557: Variable Message Sign

Enter appropriate priority level:
(See last page for explanation) **3**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This ITS/ATMS specification was held back from being submitted last September 2005 with the other ITS specification changes so comments from UDOT Structures could be incorporated. The need to use new AASHTO material references, ITS equipment, testing requirements, installation procedures, etc. (see comment review form) initiated the new Standard. Please see attached sheets for specific details itemizing each change. Any changes made that are not reflected on the Structures Comment Form come from Spec Writer's Guide or previous 2005/2006 review recommendations.

This submittal represents an effort by the TOC (Bob Strong, Troy Peterson), Structures Division (Todd Jensen, Boyd Wheeler, Ray Cook), and TransCore to update the 13557 specification. The previous submittal was part of a package of specifications reviewed by the Standards Committee on August 25, 2005 (see old meeting minutes).

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Substitute "Variable Message Sign" with the new name "Overhead Variable Message Sign and Support" everywhere.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

Not Applicable. See August 2005 meeting minute notes for Agenda Item 4. No comments were received.

ACEC Comments: (Use as much space as necessary.)

Not Applicable. See August 2005 meeting minute notes for Agenda Item 4. No comments were received.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

No additional comments received.

Construction Engineers

Contractors (Any additional contacts beyond "C" above.)

Suppliers
Kevin Davidson (Universal Industrial Sales)

Consultants (as required) (Any additional contacts beyond "C" above.)
Blake Hansen (TransCore)
Aaron Cloward (TransCore)
Bob Strong (TransCore)

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

Others (as appropriate)
Todd Jensen (UDOT Structures)
Boyd Wheeler (UDOT Structures)
Ray Cook (UDOT Structures)
Bob Strong (UDOT ITS Standards Sponsor—before December 2005)

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

No impacts currently identified.

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

No

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

No

3. Life cycle cost.

No

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Better material testing, greater clarity. Changes reflect common construction practice and types of materials used. Some changes are meant to shorten the construction duration.

H. Safety Impacts?

None anticipated.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Past reviews in August 2005 and a more recent review in February 2006 were conducted (where this specification was used as a Special Provision for the Two VMS in Region 1 Project CM-9999(814). Remaining issues identified by UDOT Structures have been resolved to their current satisfaction, but they reserve the right to comment.

Standards Committee notes from the August 25, 2005 meeting follow.

4. Supplemental Specifications 13551M, General ATMS Requirements; 13552M, Ramp Meter Signals and Signing; 13553M, ATMS Conduit; 13554M, Polymer Concrete Junction Box; 13555M, ATMS Cabinet; 13556, Closed Circuit Television (CCTV) Assembly; 13557M, Variable Message Sign; 13561M, ATMS Power Service; 13594M, Fiber Optic Communication (Agenda Item 9) – Presented by Robert Strong.

Robert said since the last meeting they have gone through all the proposed changes and have worked with Structures on updates related to that area. He said they also talked to the people at FHWA. He said some of the recommendations and changes have been made. Robert said one area from last time dealt with the references.

Blake Hansen from Transcor continued with the next part of the discussion, covering their changes.

Section 13551M: Blake said they updated the references area to show AASHTO references instead of ASTM. He said they clarified Article 2.1 Paragraph A2.

Discussion points were:

- Todd said based on his familiarity with the luminaire document referenced on the last page of Section 13551 he thought it was more of a design specification rather than an installation one. He asked what did it show about installing anchor bolts. Blake said there are some installation instructions in the document.

- Todd recommended putting the requirement directly into the specification if it is small enough instead of referencing the document so that the Contractor doesn't have to go find the document. Blake said one of the standard drawings has the information. Todd still thought a paragraph from the document should be put in the specification. Robert said the document has more than just the torque information, adding that it covers complete installation, the type of material, and the placement. He said the Contractor can go to the document to learn more than what is covered in the drawing.

- Karl said he wondered what the value is of including the reference in the specification if the Contractor doesn't even read the specification. Robert said he has found that suppliers read the specifications more than the Contractor. Todd said that when the specification states "install" then it is more the Contractor than it is the supplier. Robert commented on what the Contractor might be using the reference for. Todd said he still thought the information could be duplicated in the specification.

- Barry said while that might work for this specification, what about all the other sections. The current specification book of over 700 pages could double or triple in size if we did this. He said this is a reformatting issue and this meeting may not be the place to discuss this. Barry said they have never done that. Robert said just from an ATMS standpoint if this were done the book as Barry indicated would be three times the size. Robert added that if the Engineer or Contractor wants more detail then the reference has been provided. He said the plans tell them how to do the specific work. Someone commented that the reference could be updated, making the specification outdated.

- There was no further discussion on 13551M.

Blake went on to discuss Section 13552M. He said they reviewed the references for currency and applicability. He said that based on discussion last time the reference to a "red" LED in Article 2.2, paragraph A was changed to "white." Robert went on to provide some explanation, indicating "red" is only used for stop. He referred to discussions with the Highway Patrol when first using this particular item. Robert said according to FHWA, "white" is used around the country for enforcement at intersections. He said the ramp meter is a different breed and that he couldn't find any written information on this subject. In response to a comment Robert said many states aren't even using the enforcement light because only one lane is being monitored.

Robert said his recommendation is to turn it over to the Traffic Engineering Panel for a decision, adding that in the mean time we stay with the "red" light.

Discussion points were:

- Jim said if we approve this section today then it is with the “red” light. Robert said this impacts future construction and current operations so we should wait until the Traffic Engineering Panel makes a decision.

- Todd Emery said he would have to make sure his office is alright with this before approving it. Roland said he made the comment and was fine with it.

- Discussion continued on the usage of the light and the colors.

- Blake commented that the proposal is to leave the light as is and not change anything relating to this light.

- Todd Jensen said he had a question on 3.2 A. He asked why we are referring to an outside document in this case when one of our own specifications covers this. Blake said the same thing was done in the Traffic Signal specification.

- Referring to 2.4 B, John said the word “modified” doesn’t apply in this case.

Section 13553M was covered next. Blake said the update from the last meeting was to make sure the sawing cutting reference was correct. He said it does fit what we are doing.

Discussion points were:

- Todd Jensen asked if there is an AASHTO reference for the first ASTM reference. Blake said no.

- Karl asked about the sawing cutting and if another method would be allowed. The title of the referenced section is “Pavement Cutting.” Blake said he didn’t have a problem making the statement more generic.

Section 13554M was covered next. Blake said there were no changes from the last meeting. He said he checked the references to make sure there were no AASHTO equivalents.

Discussion points were:

- Referring to Article 3.1, Paragraph M, Todd Jensen suggested adding a specification reference. Barry pointed out that if a new related section is added then the Related Sections article needs to be updated as well.

- Referring to the next paragraph Todd said he wasn't sure if the statement clearly conveyed the proper meaning. What kind of expansion joint material? Blake said this section was modified to be consistent with the standard drawing. Blake added that last time AGC requested that the specific material be removed and the reference show just "expansion joint material." A suggestion was made to change "Department approved" to "Engineer approved."

- Jim asked about the GPS requirement in paragraph O. He said in looking back to Section 13551 he asked how or where are the coordinates to be recorded. He said he didn't understand the submittal process, adding that it is part of the as-built drawings. Jim indicated the statement didn't say that. Karl said if it a requirement somewhere else for as-builts why show it here again. The paragraph will be removed.

Section 13555M was covered next. Blake said the main change was replacing ASTM references with AASHTO references.

Discussion points were:

- Barry said in 1.3 E just the guide should be listed and not the chapter references. The chapters are referenced in the body of the specification.

- There were no other comments on this section.

Section 13556 was covered next. Blake said this section had the biggest impact in changing from ASTM to AASHTO. He said a lot of what had been called out for installation of materials didn't matter because the bolts and anchor bolts are state furnished. He said a lot of that information was removed. The supplemental changed from a modification ("M") to a complete replacement.

Discussion points were:

- Todd Jensen questioned the title of Section 03211. Barry checked the specification book and said the title was correct.

- John asked why the Roadside Design Guide was not referenced in this section. Blake said he would have to check.

- Todd asked about the type of foundation in reference to Article 2.2. He suggested a reference to the standard specification. Todd also asked about the non-shrink grout and what it referred too. Robert Strong explained the usage.

- Referring to Article 3.2, Todd said he had the same comment about the reference. He suggested referring to the standard specification.

- In reference to Article 3.4, Todd questioned the availability of guidance on the products being applied. He asked if the statement was clear enough so that the Contractor would know what we are looking for. Blake said that was not something he investigated as part of this revision, indicating that requirement did not change from the original standard. Robert Strong agreed that they needed to be more specific.

Section 13557M was covered next. Blake said the references were changed here as well.

Discussion points were:

- Referring to Article 1.3, Paragraph G, Todd said the ASTM A 36 reference should be AASHTO M 270, Grade 36. Todd said he thought there were AASHTO references for the other ASTM references as well.

- Todd said he wasn't sure what was being looked for in the addition to Article 3.1 Paragraph H. In his comments he referred to Article 2.1 VMS Foundations at the top of the page, saying that 3.1 H was under this article. This may have been a way to direct the Committee to the right location on the page and not a comment that the two were tied together. Todd said the paragraph was just a generic statement and he wasn't sure what the Contractor should be looking for in the referenced guide.

- Blake said they had looked at all the references and hadn't felt comfortable changing the references. He didn't think there were equivalents.

Section 13561M was covered next. Blake said there were no changes from last time. He said the same for Section 13594M.

Discussion points were:

- Being at the end of the ATMS specifications Jim asked if there were any other comments.

- There were no further comments.

Motion: Tim Biel made a motion to approve Supplemental Specifications 13551M, 13552M, 13553M, 13554M, 13555M, 13556, 13557M, 13561M, and 13594M as discussed and modified. Seconded by Todd Jensen.

Discussion points were:

- Todd Emery said his only concern was that their ATMS person hadn't had time to look at some of the changes. He referred specifically to the "white" versus "red" enforcement light. He said he didn't see it as an issue but didn't know what the program person would have to say. Robert Strong said it was discussed during his meeting with FHWA where he indicated that the Traffic Engineering Panel look into changing the light color. The FHWA program person didn't have any comments at that time. Robert said that was why he suggested earlier leaving the light color unchanged. Barry said the current Blue Book has the light color as red. He pointed out that the wording in the supplemental is exactly the same as in the current standard specification and the only difference is the paragraph letter. Jim said the approval today would be to leave the color as red. Barry said all we are doing is changing the draft back to the way it is in the book.

Motion: Being no further comments Jim called the question. Passed unanimously.

Barry reminded Robert and Blake of the publishing requirement and suspense date. Items not received on time may have to wait until the next publishing cycle. He said they could work out a possible delay.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1	Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.
Priority 2	Upon posting, this impacts projects being advertised.
Priority 3	Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

UDOT STRUCTURES DIVISION
COMMENT AND RESOLUTION SHEET

CODES:
A. ACCEPT COMMENT—WILL BE CORRECTED, ADDED, OR CLARIFIED.
B. DESIGNER WILL EVALUATE.
C. DELETE COMMENT
D. DEPARTMENT TO EVALUATE.

DOCUMENT CONTROL NUMBER: N/A	REVIEW TYPE: SPECIFICATION	REVIEWER(S): RAY COOK	DATE: 10/13/05
DESCRIPTION: SPECIFICATION 13557: VARIABLE MESSAGE SIGN	DESIGNER: TRANSCORE	DISCIPLINE: STRUCTURES	CRM:

ITEM NO.	DWG. NO.(1)	COMMENTS	CODE(2)	RESPONSE(2)	FINAL DISPOSITION(3)
1	1.3 O, 2.4 A.2 2.4 D	AASHTO/AWS D1.5 does not cover the welding of tubular members; therefore, use AWS D1.1: Structural Welding Code.	A	References to AWS D1.5 were replaced with references to AWS D1.1.	
2	G	Use ASTM F-1554 for anchor bolts. It has better fatigue properties than AASHTO M-314.	B, D	AASHTO M-314 will still be used until differences are defined. AASHTO requires this bolt type and it's used in other current specs.	
3	G	Although I previously commented to use AASHTO specification references instead of ASTM, we should be consistent with other specifications. (If ASTM is used in 05120, we should use it here.) I'm also thinking that if we reference Section 05120 (as I suggest later) then we may not need to include references for bolts, nuts, etc. that are not specifically called out in this spec.	A, B	We are now consistent with 05120 by changing AASHTO M111 back to ASTM A 123. However, referencing only 05120 will not allow us to use A 307 at the non-structural connections, among other things.	
4	2.1 C	Paragraphs 2 & 3 duplicate and contradict the length for galvanizing anchor bolts. Delete "and galvanize" from paragraph 2. Change paragraph 3 to galvanize the anchor bolts (full length).	A	Changed as instructed. See Spec.	
5	2.1 C.2	Sentence (after colon) is incomplete. Needs to say that threads allow free running nuts, etc.	A	Changed as instructed. See Spec.	
6	2.2	Delete this section. It does not apply to these structures. (It was probably used on projects that included precast barrier, and joint filler was used between barrier sections.)	A	Deleted as instructed.	

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UDOT STRUCTURES DIVISION
COMMENT AND RESOLUTION SHEET

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B. DESIGNER WILL EVALUATE.
C. DELETE COMMENT
D. DEPARTMENT TO EVALUATE.

DOCUMENT CONTROL NUMBER: N/A	**REVIEW TYPE: SPECIFICATION**	**REVIEWER(S): RAY COOK**	**DATE: 10/13/05**
DESCRIPTION: SPECIFICATION 13557: VARIABLE MESSAGE SIGN	**DESIGNER: TRANSCORE**	**DISCIPLINE: STRUCTURES**	**CRM:**

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7	2.4	I recommend that we reference Section 05120 for structural steel in general. This would cover requirements for materials, fabrication, high strength bolts, nuts and washers, etc. We would include here only those requirements that are different from Section 05120.	B,D	I like seeing the different materials specified for different parts of this structure instead of having to go to a different spec. for requirements. Please evaluate further and give specific verbage recommendations or leave as is.	
8	2.4	Paragraphs A.2 and D are redundant. Delete "design and fabrication" from paragraph A.2 and delete paragraph D.	A	Changed as instructed.	
9	2.4 A.3	Reword: "Galvanize all bolts, nuts, and washers in conformance with AASHTO M 232." (High strength bolts use load indicator washers and hardened washers, but do not use lock washers, so the last sentence should be deleted.)	A	Changed as instructed.	
10	2.4 A	Add a statement that all main load carrying tension members with a steel thickness greater than ½" shall meet the current Charpy V-Notch impact requirements in the AASHTO *Standard Specifications for Highway Bridges*.	A	Changed similar to note. See spec.	
11	2.4 B.1	All of chemical composition percentages should be "less than or equal to," ie., Carbon less than or equal to 0.25, etc.	A	Changed as instructed.	
12	2.4 B.2	Change to say the following: "Bolts, nuts and washers: Refer to Section 05120."	A	Changed as instructed.	
13	2.4 B	Delete paragraphs 3, 4 & 5. (B.5 duplicates A.3.)	A	Changed as instructed.	

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14	2.4 C.2 thru C.5	Can delete the word "specifications." It is redundant and not typically stated this way.	A	Changed as instructed.	
15	2.4 C.3	Are there stainless steel nuts and washers to go with the stainless steel bolts? (I don't have the detail with me.)	A,D	No.	
16	2.4 C.5	Recommend changing wording back to "Use lock washers on all bolts."	A	Done.	
17	2.4 C.6	This paragraph duplicates A.3, so it can be deleted.	A	Done.	
18	2.4 C.7	For consistency with C.6, change C.7 to "Galvanize entire sign assembly with mounting brackets: AASHTO M 111."	A	Done.	
19	3.1 A	Not sure why we're putting design criteria in a construction specification. The design will already be complete when these are bid and built. This section can be deleted.	A,D	It's put in so the contractor knows what the sign should be or should have been designed to and to define what this spec. applies to. Will change to provide information instead of implying contractor requirements.	
20	3.1 C	"foundation" should probably be plural: "foundations."	A	Done.	
21	3.1 H	This is a very vague reference. If there are specific requirements from these references that we should be including here, we should include them. Otherwise, referencing Section 05120 for steel members should cover it.	A	Deleted as implied.	

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22	3.2	I question whether we need a "Construction Sequence." Many of these items are redundant or covered by other specifications. This section needs to be re-written. (This may have been originally written this way for projects that only included overhead sign installations.)	A,D	I like it but have modified it to try to streamline the construction phase and put more responsibility on the Contractor. Any specific reference to tolerance is welcome. Perhaps tolerance can become part of the/a testing and acceptance section/procedure.	
23	3.2 B – D	This procedure seems cumbersome and not contractor-friendly. It requires that (1) the design height and length are determined after the foundation is constructed, and (2) the shop drawings cannot be reviewed and the structural support fabricated until after the foundation is constructed and surveyed. This can significantly lengthen the construction time. We should include only the items that are relevant and necessary to this work item and remove the rest. Can either require the Contractor to verify the elevations and locations of foundations / anchor bolts to ensure that sign will fit, specify some dimensional tolerance, or make him responsible for the fit.	A	Hopefully the changes have corrected this. The new wording allows early shop drawing review while still requiring a surveyed structure with engineering approval. The new procedure has the Shop Drawing reviewer verifying the plans are correctly reflected or presenting new minor modifications. The contractor is responsible for the final fit and clearance.	

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24	3.3 A	I'm not aware of any excavation for a sign foundation where this would apply. If there is you can leave it; otherwise, delete it. (Is this referring to the caisson drilling?)	A, D	I am. Section 13556 also refers to 13551 for the CCTV Pole foundations. I'll leave it for now, but we may want to review 13556 and 13551 before we change this. There's good information in both locations but maybe we can consolidate into 13551 or 02466 if all the items are performed as needed.	
25	3.3	Reference Section 02466 for constructing drilled caissons.	A	This was added.	
26	3.3 C.2	Reword: Form caisson to a minimum of 6-inches below the ground surface.	A	Done.	
27	3.3 D	Delete.	A	Done.	
28	3.3 E	Delete. This is part of the roadway design and is not a part of this item.	A	Done.	
29	3.4 A.2	I don't know of any "Standard Plans." Are there any?	A	Not yet. We've revised.	
30	3.4 A.3	Delete last sentence and add requirement to tighten nuts 1/6 turn past snug tight. Include definition of snug tight from the AASHTO *Standard Specifications for Structural Supports for Signs, Luminaires and Traffic Signals*. (see 5.17.6.2 Commentary)	A	Done.	

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31	3.4 B.5	Don't understand this paragraph. Steel type is covered in the materials section (2.4 C) and I'm not sure what AASHTO reference means.	A	Deleted.	
32	G	Add requirement to fill the void between the base plate and top of foundation with non-shrink grout after completing the sign erection.	A	Done.	
33	3.6	Should Acceptance go in Section 1? Any acceptance requirements for the structural support itself?	B, D	Perhaps we can come up with acceptance requirements together that we can put in a separate document (and reference here) or in the spec itself. We already have CVN, but it can be moved and grouped with material, tolerance, clearance, tightening, and other requirements. Or we can place exact requirements in the pertinent portions of the spec. and then require documentation/certification for those specific sections as part of the T&A. An additional reference in the T&A to 05120 will only cover part of it. The T&A in this spec. is consistent with the other ATMS specs and I would not alter its placement.	
34	G; 1.1	Did not see any requirements for the VMS controller. Is this a part of the cabinet?	A	No, but it's a state furnished state installed item and doesn't need requirements.	

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Supplemental Specification
2005 Standard Specification Book

SECTION 13557

~~VARIABLE MESSAGE SIGN~~OVERHEAD VARIABLE MESSAGE SIGN AND SUPPORT

Delete Section 13557 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Install and test all Department furnished items including VMS sign assembly, VMS access platform, ATMS ~~VMS~~ cabinet, and VMS controller.

B. Furnish, install, and test VMS ~~tubular~~ support structures, ~~VMS sign assembly,~~ sign connection hardware, catwalk, cabinet foundation, communications cable and any additional equipment required. ~~Install state furnished ATMS cabinet.~~ Furnish all incidental items required to provide a complete cable connection between VMS controllers ~~as shown in the details and specifications~~. Test the installed VMS and adjust the viewing angle as required.

1.2 RELATED SECTIONS

A. Section 01554: Traffic Control

B. Section 02466: Drilled Caisson

C. Section 02841: W-Beam Guardrail

D. Section 02843: Crash Cushions

E. Section 02844: Concrete Barrier

F. Section 03055: Portland Cement Concrete

G. Section 03152: Concrete Joint Control

H. Section 03211: Reinforcing Steel and Welded Wire

I. Section 03310: Structural Concrete

J. Section 05120: Structural Steel

K. Section 13551: General ATMS Requirements

L. Section 13554: Polymer Concrete Junction Box

M. Section 13555: ATMS Cabinet

N. Section 13595: ATMS Integration

1.3 REFERENCES

A. AASHTO M 31: Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

~~B. AASHTO M 111: Zinc (Hot-dip Galvanized) Coatings on Iron and Steel Products~~

~~C.~~B. AASHTO M 164: Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

C~~D~~. AASHTO M 232: Zinc (Hot-dip Galvanized) on Iron and Steel Hardware (nuts, washers, and anchor bolts)

D~~E~~. AASHTO M 270: Carbon and High-Strength Low-Alloy Structural Steel Shapes, Plates, and Bars and Quenched and Tempered Alloy Structural Steel Plates for Bridges

~~F.~~E. AASHTO M 284: Epoxy Coated Reinforcing Bar

~~G.~~F. AASHTO M 291: Carbon and Alloy Steel Nuts

~~H.~~G. AASHTO M 293: Hardened Steel Washers

~~I.~~H. AASHTO M 314: Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

~~J.~~I. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals

J. ~~K.~~ ASTM A 53: Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

K. ASTM A 123: Zinc (Hot-dip Galvanized) on Iron and Steel Hardware (nuts, washers, and anchor bolts)

L. ~~L.~~ ASTM A 307: Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

M. ASTM B 221: Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

N. ASTM B 308: Aluminum-Alloy 6061-T6 Standard Structural Profiles

O. ASTM B 429: Aluminum-Alloy Extruded Structural Pipe and Tube

P~~M~~. ASTM B 766: Cadmium Coatings on Iron, Steel, and Other Metals

Q~~N~~. ASTM F 593: Stainless Steel Bolts, Hex Cap Screws, and Studs

R~~O~~. ANSI/AASHTO/~~ANSI/AASHTO/~~AWS Structural Welding Code D1.1-- Steel~~D1.5: Welding Specifications~~

S. ANSI/AASHTO/AWS Structural Welding Code D1.2-- Aluminum

1.4 SUBMITTALS

A. Mill Certificates for all structural steel. Refer to Section 05120.

B. Shop Drawings for all structure steel. Refer to Section 05120.

C. Provide all of the following submittals as described in Section 13551:
1. Contractor Furnished Material and Equipment Lists
2. Test Reports for the Cable & Conductor Test, the Local Field Operations Test, and the Thirty-Day Burn-In Test
3. Completion Notice
4. Compliance Certificate
5. Manufacturer's Equipment Documentation
6. As-Built Drawings

C. Provide item number and name on all materials certificates.

PART 2 PRODUCTS

2.1 VMS FOUNDATIONS

A. Concrete: Class AA(AE) required. Refer to Sections 03055 and 03310.

B. Reinforcing Steel: Coated Steel: Refer to Section 03211.

C. Anchor Bolts:

1. ~~Conform to~~In accordance with AASHTO M 314 Grade 36.
2. Thread ~~and galvanize~~ the ~~upper 12 inch~~anchor bolts where shown and allow ~~:~~ free running nuts, by hand, for the entire length ~~of the threads~~.
3. Galvanize ~~the upper 14 inches of~~ the anchor bolts, all nuts and washers, in accordance with ~~the requirements of~~ AASHTO M 232.
4. ~~Hook dimension of 8 inches as shown in Standard Plans.~~
5~~4~~. Do not weld anchor bolts to reinforcing steel.
6~~5~~. Nuts: ~~Conform to~~Use AASHTO M 291 Specifications.
7~~6~~. Washers: ~~Conform to~~Use AASHTO M 293 Specifications.

~~2.2 BITUMINOUS JOINT FILLER~~

~~A. Preformed material: Refer to Section 03152.~~

2.2~~3~~ JUNCTION BOX

A. Refer to ~~section~~ Section 13554.

2.3~~4~~ VMS SUPPORTS

A. Structural Steel: General

1. Hot-dip galvanize all structural steel after fabrication in accordance with AASHTO M 111. Structural steel may be metallized using electric arc sprayed zinc wire as an alternative.
2. Welding ~~design and fabrication~~: In accordance with the ANSI/AASHTO/AWS D1.1~~5~~ Specifications.
3. ~~Use galvanized~~Galvanize all bolts, nuts, and washers in ~~conformance~~ accordance with AASHTO M 232. ~~Lock washers required on all bolts.~~
4. Charpy V-Notch tests are required for all main load carrying tension members with a ½-inch~~"~~ steel thickness or greater. Test results must meet requirements for zone 2.

B. Structural ~~Tubing~~Pipe:

1. Use low carbon steel conforming to ASTM A 53 Grade B, except use chemical composition requirements of: carbon ≤ ~~less than or equal to~~ 0.25 percent, ~~-~~ phosphorus ≤ ~~less than or equal to~~ 0.04 percent, manganese ≤ ~~less than or equal to~~ 1.35 percent, and silicon ≤ ~~less than or equal to~~ 0.05 percent. ~~Conform to~~Use ASTM A 53 Grade B for other elements.
2. Bolts, nuts, and washers: ~~Conform to AASHTO M 164 Specifications~~Refer to Section 05120.
3. ~~Nuts: Conform to AASHTO M 291 DH Specifications.~~
4. ~~Washers: Conform to AASHTO M 293 Specifications. Lock washer: all bolts.~~
5. ~~Galvanize bolts, nuts, washers: AASHTO M 232.~~

C. All Other Structural Steel:
1. All other shapes and plates: ~~Conform to~~Use AASHTO M 270 Grade 36.
2. Bolts: ~~Conform to~~Use ASTM A 307 ~~Specifications~~.
3. Stainless Steel Bolts: ~~Conform to~~Use ASTM F 593 Type 304 ~~Specifications~~.
4. Nuts: ~~Conform to~~Use AASHTO M 291 ~~Specifications~~.
5. Washers: ~~Conform to~~Use AASHTO M 293 ~~Specifications~~. ~~Lock washer: all bolts.~~Use lock washers on all bolts.
6. ~~Galvanize bolts, nuts, washers: AASHTO M 232.~~
7. ~~6.~~ Galvanize ~~E~~entire sign assembly with mounting brackets: ~~Galvanize to~~ AASHTO M 111.

2.4 VMS CATWALK

A. Aluminum: General
1. Use 6061-T6 aluminum in accordance with:
   a. ASTM B 308 for I-beams, H-beams, channels, angles, tees, and zees.
   b. ASTM B 429 for pipe and tube.
2. Grating: Use 5052 H32 aluminum expanded metal conforming to ASTM B 221 with the size shown in the contract.
3. Welding: In accordance with the ANSI/AASHTO/AWS D1.2~~2~~ Specifications.

~~D. Welding design and fabrication: ANSI/AASHTO/AWS D1.5 specifications.~~

PART 3 EXECUTION

3.1 PREPARATION

A. This specification applies to overhead ~~Type I~~ VMS structures designed with the following Type I criteria~~Sign Design Criteria~~:

1. Dead Load: 4,2~~8~~00 lb~~.~~
2. Live Load: Two 255-lb workers per catwalk~~510 lb.~~
3. Wind Load: 100 mph ~~wind load.~~
4. ~~Snow and ice loadings~~Ice Load: 3 psf applied to surfaces and one sign face~~.~~

B. Load, transport, and install all state-furnished materials per the manufacturer's instructions and as shown in the ~~plans~~ contract.

C. Provide foundations, VMS supports, junction boxes, ground rod, grounding lug, conduit, and all additional miscellaneous items required for a complete and operational VMS.

D. Install all wiring, conduit, and junction boxes as shown ~~on site plans and details~~in the contract.

1. Field locate all conduit and junction boxes to avoid drainage areas and steep slopes whenever possible.
2. Protect existing conductors while installing cables and conductors.
3. Install surge suppressors at the VMS Sign Controller and ATMS Cabinet. Minimum specifications for surge suppressors are as follows:
   a. Protects Pairs 1-8
   b. Protects all Pins (8)
   c. Maximum Surge of 100 mA
   d. Turn on at 10 mA
   e. Typical Capacitance of 55 pF
   f. Series Resistance less than 0.02 Ω
   g. 0 to 100 percent Humidity
   h. Operates in -40 degrees F (-40 degrees C) to 185 degrees F (85 degrees C) Temperatures

E. Furnish and install all incidental items, such as wire nuts, grommets, tape connectors, and electrical nuts, necessary to make the VMS system complete.

F. After installation, the exterior of all equipment must be free of all loose rust and mill scale, dirt, oil, grease and other foreign substances.

G. Restore work area to the original condition or better after work is completed.

~~H.Construct VMS to conform to current editions of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and AASHTO Standard Specifications for Highway Bridges.~~

3.2 CONSTRUCTION SEQUENCE

A. Deploy traffic control devices and/or personnel. Refer to Section 01554.

B. Fabricate structural supports and catwalk. ~~C~~Construct foundations, establishing base plate elevations in accordance with project plans. Obtain Engineer's approval for all dimension changes.

~~C. Fabricate structural supports and catwalk. Obtain Engineer's approval for all dimension changes. Determine design height of both vertical supports, and length of horizontal support based on the 'as-built' foundation field survey. Meet vertical clearance requirements during construction. Determine catwalk design dimensions based on survey data. Obtain Engineer's approval for all dimension changes.~~

~~D. Fabricate structural supports and catwalk. Review shop drawings and relate to survey information to assure consistency.~~

C~~D~~E. Survey the constructed base plate locations, have the Engineer approve their layout before erecting the sign structure, fit the structure to the foundations' anchor bolts, and meet vertical clearance requirements.

~~Erect structure with sign. Contractor responsible for fitting the structure to the foundations' anchor bolts.~~

D~~E~~F. Remove shipping supports and connect all wiring and cables in a neat and orderly fashion, verify all parts are properly seated and functional and make final adjustments to sign horizontal and vertical angles. Orient the VMS sign perpendicular to the viewing angle of motorists 800 feet before the sign. The Engineer ~~reserves the right to~~may order adjustments to the sign angle during the initial installation.

3.3 VMS FOUNDATIONS

A. Excavation

1. Perform as described in Sections 13551 and 02466.

B. Anchor Bolts:

1. Provide anchor bolt template during installation of anchor bolts. Fabricate the bolt template of ~~1/4~~¼ -inch thick minimum steel plate, similar to anchor plate details. Match drill to each base plate.
2. Fill the void between the base plate and top of foundation with non-shrink grout after completing the sign erection.

C. Earthwork

1. Place compacted embankments prior to drilling.
2. ~~Drill~~ Form caissons ~~forms~~ to a minimum of 6 inch~~es~~ ~~minimum~~ below the ground surface. Refer to Section 02466. Place compacted backfill before erecting post.

~~D. Bituminous filler at concrete joints. Refer to Section 03152.~~

~~E. Barrier~~

~~1. Locate all foundations and poles within traffic barriers per Sections 02841 and 02844 and/or Crash Cushions per Section 02843.~~

3.4 VMS SUPPORTS

A. Structural ~~Tubing~~Pipe:

1. Provide hand holes for ~~tubular~~ the overhead pipe frame on one side only.
2. Locate inserts at the bottom of the mast arm ~~where shown on the Standard Plans~~. Weld 1 ~~1/2~~½ -inch diameter insert in each hole. Thread inserts before galvanizing and provide galvanized plugs.
3. Rake post as necessary during sign erection using leveling nuts to level the sign panels. At final position, create a snug tight condition by wrench tightening both top and bottom anchor bolt nuts against the base plate until full contact is made. ~~. Obtain all bolt torque values from the design or the Engineer.~~Tighten top nuts one-sixth turn past snug tight and retighten lower nuts to maintain full contact.

B. All Other Structural Steel:

1. Use one sign-mounting bracket at each sign ~~Z bracket~~support. See sign fabricator's drawings for number and location of ~~Z brackets~~supports (i.e., channels or Z-bracket).
2. Pre-tension steel rod to 11,000 lb~~s~~.
3. Sign placement on horizontal member may be adjusted up to $^{3}/_{8}$ inch~~es~~ upward for VMS platform to match catwalk elevation.
4. ~~Refer to AASHTO M 270 Grade 36 and AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.~~

C. Earthwork:

1. Place and compact backfill prior to erecting supports.

3.55 ~~VMS~~ ATMS CABINET

A. Install ATMS cabinet according to ~~section~~ Section 13555.

3.66 TESTING AND ACCEPTANCE

A. Successfully complete the following tests:

1. Cable and Conductor Test: Obtain UDOT's newest version of the ATMS Cable and Conductor Test from the UDOT Web site. Refer to http://www.udot.utah.gov/index.php/m=c/tid=719.
2. Local Field Operations Test: Obtain UDOT's newest version of the Variable Message Sign Local Field Operations Test form from the UDOT Web site. Refer to http://www.udot.utah.gov/index.php/m=c/tid=719.
   a. Conduct the Local Field Operations test after the Cable and Conductor test has been successfully completed and the Cable and Conductor Test Report has been approved by the Engineer.
   b. Verify physical construction has been completed in accordance with the plans and specifications and that the connecting cabling has been properly installed.
   c. Furnish all equipment, appliances, and labor necessary for the test.
3. Acceptance Tests: Refer to Section 13595.

END OF SECTION

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod
Title/Position of preparer: Technical Writer
Specification/Drawing/Item Title: Standards Committee Policy 08A5-1
Specification/Drawing Number:

Enter appropriate priority level:
(See last page for explanation) **N/A**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

Membership recommendation from the Construction Division to change the voting member from Darrell Giannonatti (Director, Construction and Materials) to Karl Verhaeren (Engineer for Construction). This better fits the organization within the Construction Division with the Engineer for Construction and the Engineer for Materials both being voting members.

With the split of the Structures Division into the Bridge Design and Bridge Operations Sections a membership option needs to be discussed.

There has been some discussion for a new voting member, representing the Traffic Operations Center. The ATMS Standard Specifications and Standard Drawings are receiving a lot of attention, undergoing several changes over the last several months. In addition, several other Standards relate to the ATMS area and could impact those operations.

There has also been some discussion for an additional voting member from the regions. This could be more than one position.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Not applicable.

C. Stakeholder Notification for AGC and ACEC:

Not applicable.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

An agenda item at the March Technical Committee meeting. Recommendation from there was for a Region 3 Materials representative.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

Not applicable.

F. Costs? (Estimates are acceptable.)

None

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Updates policy to match operational changes within Project Development and meet other needs related to the review and approval on new and modified Standards.

H. Safety Impacts?

None.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Discussion initiated at the February 23, 2006 Standards Committee meeting.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1	Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.
Priority 2	Upon posting, this impacts projects being advertised.
Priority 3	Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Standards Committee **UDOT 08A5-1**
Effective: June 30, 1967 Revised: April 27, 2006

Purpose

To establish the procedure and place responsibility for the development, revision, and preparation of standard drawings, specifications, and related policies and procedures, and for their review, approval, printing, and distribution.

Policy

The Standards Committee reviews and approves all standard drawings, specifications, supplemental specifications, and related policies and procedures prior to implementation. The Committee also considers relevant matters presented to it by interested units or individuals, formulating appropriate action within its scope of responsibility.

The Standards Committee is composed of **eight permanent members (number may change depending on the below)**, with the Project Development Engineer as chairperson and the Standards and Specifications Engineer serving as secretary. Membership, representing the offices, divisions, sections, or units as indicated, is as follows:

Members

Director, Project Development

Region Director (Appointed by the Deputy Director) **(Increase number of positions or add worker level representative)**

Director, Engineering Services

~~Director, Construction and Materials~~

Engineer for Construction (Possible new position.)

Engineer for Materials

Engineer for Maintenance

Engineer for Traffic & Safety

State Bridge Engineer **(Position and title need to be reviewed in light of changes within the Structure Division.)**

Advisory Members

Federal Highway Administration (FHWA)

Associated General Contractors (AGC)

American Council of Engineering Companies, Utah Branch (ACEC)

Members should appoint a substitute when the member is unable to attend a meeting. The substitute assumes full authority to bind the represented division to a decision by vote or other action in matters pertaining to the Standards Committee. Qualified individuals will continually fill all positions.

Temporary advisory members may be selected by the Committee to advise and assist when specialized talents are needed. Advisory members do not have the power to vote. However, FHWA approval is required for all standard drawings, standard specifications, and supplemental specifications, where Federal participation is anticipated. This approval is provided in a letter from FHWA presented to the Standards Committee the day of the scheduled meeting in accordance with procedure 08A5-1.3.

Robert's Rules of Order will generally be followed, and in matters not provided for or not applicable, the Committee may formulate its own rules of procedure. **Five members are required to constitute a quorum. (Will this have to chance if membership changed?)** As a matter of rule, items presented at a regularly scheduled meeting can be approved at that meeting if Attachment 1 has been completed in sufficient detail for the Committee to make an approval decision. Items presented at special meetings will be handled on a case-by-case basis.

Meetings are normally scheduled for the last Thursday, every other month, starting at 8:00 a.m., for four hours. The chairman may call or cancel a meeting, depending upon the quantity and urgency of the business at hand. Three or more of the permanent members may also call meetings.

The Deputy Director has final approval authority of actions of the Standards Committee.

The Deputy Director approves all membership changes.

Definitions

Sponsor

An individual or task force (appointed by the Chairman of the Standards Committee) presenting an item to the Standards Committee. The sponsor should be a member of the Standards Committee or be in contact with a Committee member who is familiar with the subject matter contained in the document.

Technical Staff Support

That support provided by the Standards and Specifications Section to the sponsor identifying the need for a new or revised document. Works closely with the sponsor or with a task force in the actual preparation of draft or final documents, including supporting documentation.

That support provided by the Standards and Specifications Section to take actions related to meeting minutes and agenda.

Draft Document

Document prepared for review by the Standards Committee and conforming to specified guidelines.

Final Document

Documents prepared from approved drafts for final review and approval by the Standards Committee and conforming to specified guidelines.

Procedures

Preparation and Approval of Documents by the Standards Committee UDOT 08A5-1.1

Responsibility: Sponsor

Actions

1. Determine need to develop new or revised standard drawings or specifications or the need to present information of interest to the Committee.

Responsibility: Sponsor (with assistance from the Standards & Specifications Section)

2. Prepare draft of new or revised specifications, standard drawings, or general information as specified below.

   (a) Specifications, Supplemental Specifications. In the case of a revised document, prepare the draft with the "**MS Word Track Changes**" option turned on.

   (b) Standard Drawings. Prepare the draft.

   (c) General Information. Prepare the draft in a format suitable for the information.

3. Complete all Submittal Sheet Requirements

   (a) Allow all Stakeholders a two-week response time to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

   (b) Complete Procedure 08A5-1.4, Stakeholder Notification and return to the next step on completion of Procedure 08A5-1.4 or after 14 calendar days if no comments are received.

4. Submit all pertinent information including a completed attachment 1, specifications, or drawings to the Standards & Specifications Section at least fourteen working days before a regularly scheduled Standards Committee meeting. Refer to the Standards Committee Web site at http://www.udot.utah.gov/index.php/m=c/tid=303 for meeting dates and deadlines. Include all electronic files were possible.

Responsibility: Standards & Specifications Section

5. Review related documents and make any changes that may be required as a result of the draft of new or revised standard drawings, specifications, or information.

6. Prepare the agenda in accordance with UDOT procedure 08A5-1.2.

7. Publish the entire package to the Standards Committee Web site and send out email notice of publication in accordance with UDOT procedure 08A5-1.2.

Responsibility: Standards Committee Members

8. Review the agenda with attachments prior to the Committee meeting.

Responsibility: Sponsor/Presenter

9. Present the draft of new or revised standard drawings, specifications, or general information with supporting documentation and explanation to the Standards Committee.

Responsibility: Standards Committee

10. Take one of the following actions:

    (a) Discuss the standard drawing, specification, or information as presented. Approve the item as presented, or.

    (b) Discuss the standard drawing, specification, or information as presented. Approve the item with changes, or

    (c) Refer the standard drawing, specification, or information back to the Sponsor so that the Sponsor can make required changes before bringing the item back to the Committee, or

    (d) Reject/defer the standard drawing, specification, or information.

Responsibility: Sponsor and Standards & Specifications Section

11. When either step 10 (a) or 10 (b) is taken, prepare the final copy of the standard drawing, specification, or information as required and as specified below.

    (a) Specifications, Supplemental Specifications. Remove all markings made in accordance with item 2A above. Place the effective date of the change on the document. The effective date is the approval date (meeting date) unless the Committee approves a future date. Make any approved or editorial changes in accordance with Step 13.

(b) Standard Drawings. Make any approved or editorial changes in accordance with Step 13. On the final drawing(s), place the approval date in both “Recommended for Approval” and “Approved” date lines. The dates are the date that Standards Committee approves the drawing. Complete the “Revisions” section.

(c) General Information. Prepare the final copy in a format suitable for the information. Make any approved or editorial changes in accordance with step 13.

12. When step 9(c) is taken, make the necessary changes and go back through steps 2 through 11.

Responsibility: Sponsor

13. Make the editorial changes to an approved item and send electronic files to the Standards & Specifications Section within **five** working days from the date of the meeting. If approved with no changes, check with the Standards Section to make sure they have all needed files.

Responsibility: Standards & Specifications Section

14. For approved standard specifications, supplemental specifications or standard drawings complete step 16 of UDOT procedure 08A5-1.2.

Preparation of Minutes and Distribution of Minutes and Approved Items UDOT 08A5-1.2

Responsibility: Standards and Specifications Section

Actions

1. Attend Standards Committee meeting and as required, gather information needed to transcribe meeting minutes.

2. Following the meeting, prepare a draft of the minutes for review by the Committee Secretary.

Responsibility: Standards Committee Secretary

3. Review and edit the draft of the meeting minutes.

Responsibility: Standards and Specifications Section

4. Gather information needed to prepare agenda for the next meeting.

5. Make required changes to the meeting minutes.

6. Update the agenda section of the minutes.

7. Review all submitted files and information.

8. Create PDF files of submitted items and compile into one PDF file package.

9. Publish the agenda package to the Standards Committee Web site at least ten working days prior to the next regularly scheduled meeting.

10. Send an e-mail to the “Standards Committee Issues” group advising them that the agenda package has been published to the Standards Committee Web site.

11. Make and distribute hard copies of the package to the Chairman and the Standards Section.

Responsibility: Standards Committee

12. Approve with or without modifications, the minutes of the previous meeting.

13. Take action on agenda items in accordance with UDOT procedure 08A5-1.1.

Responsibility: Standards and Specifications Section

14. Make any required changes to the meeting minutes.

15. File the minutes as required.

16. Publish all changes within ten working days from the last Standards Committee meeting.

Approval By FHWA **UDOT 08A5-1.3**

Responsibility: Standards and Specifications Section

Actions

1. Notify FHWA in accordance with 08A5-1.2, Step 10 that the minutes agenda package has been published to the Standards Committee Web site.

Responsibility: FHWA

2. Distribute the agenda package downloaded from the Standards Committee Web site within the FHWA Division Office for review and comment as appropriate.

3. Complete an approval letter to be provided the same day of the Standards Committee meeting. Provide the letter prior to the meeting to the Standards Committee Chairperson and Secretary if attendance by FHWA at the meeting is not possible.

4. Provide an electronic copy of the approval letter by e-mail to the Standards Committee Chairperson and Secretary.

5. Provide comments during the regularly scheduled Standards Committee meeting.

Responsibility: Standards and Specifications Section and Standards Committee

6. Complete UDOT 08A5-1.1, Step 10 to discuss FHWA comments

7. Complete remaining procedural steps for approved items beginning at UDOT 08A5-1.1, Step 11.

Responsibility: Sponsor

Actions

1. Send a copy of the proposed Standard Specification, Supplemental Specification or Standard Drawing and Submittal Sheet by email to the AGC and ACEC Standards Committee representative. If no Submittal Sheet is available provide a memo that outlines the change and the reason for the change.

2. Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

3. Coordinate with all additional stakeholders in accordance with the Submittal Sheet.

Responsibility: AGC/ACEC Committee Member

4. Select at least two AGC or ACEC members each from respective membership to review and comment on the proposed change.

5. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Stakeholders

6. Review and comment on the proposed change.

7. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Sponsor

8. Return to Procedure 08A5-1, step 4 and continue the process.

Attachment 1 - Standards Committee Submittal Sheet

Standards Committee Submittal Sheet

Name of preparer: _____

Title/Position of preparer: _____

Specification/Drawing/Item Title: _____

Specification/Drawing Number: _____

Enter appropriate priority level:
(See last page for explanation) ____

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at http://www.udot.utah.gov/index.php/m=c/tid=659 for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

ACEC Comments: (Use as much space as necessary.)

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

Contractors (Any additional contacts beyond “C” above.)

Suppliers

Consultants (as required) (Any additional contacts beyond “C” above.)

FHWA (To be accomplished as part of the two-week process before submitting to the Standards and Specifications Section for inclusion on the Standards Committee agenda.) (This is in addition to the requirements of UDOT Policy 08A5-1, procedure 08A5-1.3.)

Others (as appropriate)

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

3. Life cycle cost.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

H. Safety Impacts?

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1	Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.
Priority 2	Upon posting, this impacts projects being advertised.
Priority 3	Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod
Title/Position of preparer: Technical Writer
Specification/Drawing/Item Title: Projected Schedule for New Standards
Specification/Drawing Number:

Enter appropriate priority level:
(See last page for explanation) **N/A**

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:
1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (http://www.udot.utah.gov/index.php/m=c/tid=303)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

The purpose is to discuss a schedule for a new set of Standard Specifications and Standard Drawings and the issue date. The 2005 version went into effect in January 2005, but planning and work began in the July 2004 time period.

Proposed events to consider.

1) Depth of the change. Do we just incorporate all changes to date or do a more detailed review? If a detailed review is done, review by all specification and drawing owner, AGC, and ACEC will be needed.

2) Coordination and approval schedule.

a) Normal update, no major review. Advise all areas of upcoming revision and request inputs. April and June Standards Committee meetings. Proposed changes, either Supplemental Specifications or Standard Drawings to be presented for approval in the August and October meetings. Approved items would take effect when approved and incorporated into the new set of Standards. October would be the last time items could be approved and make the new version.

b) Major review and update. Requires a total review by owers, AGC, and ACEC. Kickoff would have to be no later than the February Standards Committee meeting. Advise all areas at that time and set up meetings. (The following is the same proposed schedule as "a" above. This part of the process would not change.) Proposed changes, either Supplemental Specifications or Standard Drawings to be presented for approval in the August and October meetings. Approved items would take effect when approved and incorporated into the new set of Standards. October would be the last time items could be approved and make the new version.

c) Cancel the December Standards Committee meeting. This meeting has been cancelled the last few years. In 2004, it was cancelled because of 2005 version preparation as well as the holidays and Engineering Conference. In 2005, it was cancelled because of the holidays and Engineering Conference. Not having the December meeting has helped not only with the time needed to prepare a new version but to give everyone a break. Gathering and preparing inputs is difficult this time of year because everyone is busy with the Engineering Conference and then the short suspense date with the holidays creates problems.

3) Publishing and printing Spec Book.

a) Kickoff and initial steps. Begin process to find a publisher for the specifications book hard copy in July. Use previous edition as a guide for bid submittal. Prepare as much of the specification book as possible by that date with updates posted as changes are approved.

b) After the October Standards Committee meeting prepare the final specifications book and send to the printer by mid November. This gives a month and a half to print, bind, and ship the books.

4) Publishing and printing Drawing Book.

a) Publishing is mostly electronic. Only a small number of hard copies are printed for the Committee and regions.

b) Following the October meeting and approvals the electronic files would be prepared and digitally signed by Jim and Carlos. This process takes place while the specification book is at the printer.

5) Updating other files to include Advertising Checklists and Project Table of Contents files. This process takes place while the specification book is at the printer.

6) Web site update and rollout. This process can start prior to the October meeting to get the layout set. Files could not be added until completion of all above steps. Time period would be November and December for a January rollout.

7) Final steps. In 2005 the hard copy did not come in until approximately mid-January. During the first two weeks of January the web site would be finalized.

Recommendation: Publish a new set of Standards and all associated items for January 2008. Begin planning and kickoff in February 2007 in accordance with item A2b above for a major review and updated.

B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Not applicable.

C. Stakeholder Notification for AGC and ACEC:

Not applicable as this time.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Not applicable as this time.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

Not applicable as this time.

F. Costs? (Estimates are acceptable.)

There is a cost of holding extra meeting and preparing a new version of the Standards, but this is not a determining factor in deciding when to print a new version.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

A new starting point for Standards used in projects. Multiple months of changes are incorporated in the new version so the starting point is no changes. The regions like changes kept to a minimum. Currently with five Standards Committee meetings a year we put our five supplemental specifications issues and five drawing changes a year. Occasionally there may not be any changes for a given meeting. This month, April 2006 is the first in this cycle with no expected changes to the drawings.

H. Safety Impacts?

None anticipated unless addressed by a specific change to a Standard.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

The following is a summary of the percent of change to date, including proposed changes in April 2006.

1) Standard Specifications in the 2005 version - 135

a) Sections changed by supplemental specification - 31 (some changed more that once but that is not considered in the percent of change)

b) 23 percent of the sections have changed since January 2005.

c) Anticipated yearly changes - 25. Percent of change by 2008 version is 60 percent. For 2007 version, 41 percent.

2) Standard Drawings in the 2005 version - 220

a) Drawings changed - 61 updates and 20 new. 80 total. Seven deleted. 87 drawings impacted.

b) 40 percent change based on the 220 starting number and 87 changes of some sort.

c) Changes to the AT and SL drawings was significant. Not an expected future change.

d) Anticipated yearly changes not considering a change like those for the AT and SL drawings and other unique changes in 2005 is approximately 25. Percent of change by 2008 is 62 percent. For 2007 version, 50 percent.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect **four weeks** later for projects being advertised.

Action Item Update for April 27, 2006 Standards Committee Meeting

(As of April 3, 2006)

Item 1, Rumble Strips: Item was due for this meeting. Policy already published. No coordination by the Standards Committee. No other information received in response to request.

Item 2, New Drawing of Three-legged and Four-Legged Intersection: Item not due until June 2006 meeting. No information received in response to request.

Item 3, Supplemental Specification 00555M, Prosecution and Progress, Limits of Operation: Due date changed at February 2006 meeting to open. No target date. No information received in response to request.

Item 4, Painted Cattle Guard issue to the Maintenance Operations Engineers. The target date is unknown. Item presented to UTRAC for action. No other information received in response to request.

Item 5, Supplemental Specification to cover cast-in-place concrete drainage structures. Combined with Section 02633. On current agenda for approval.

Item 6, Standards Committee membership issues. Taken to technical committee. Recommendation covered on current agenda.

End of Agenda Package